

# THE MILLING WORLD

AND

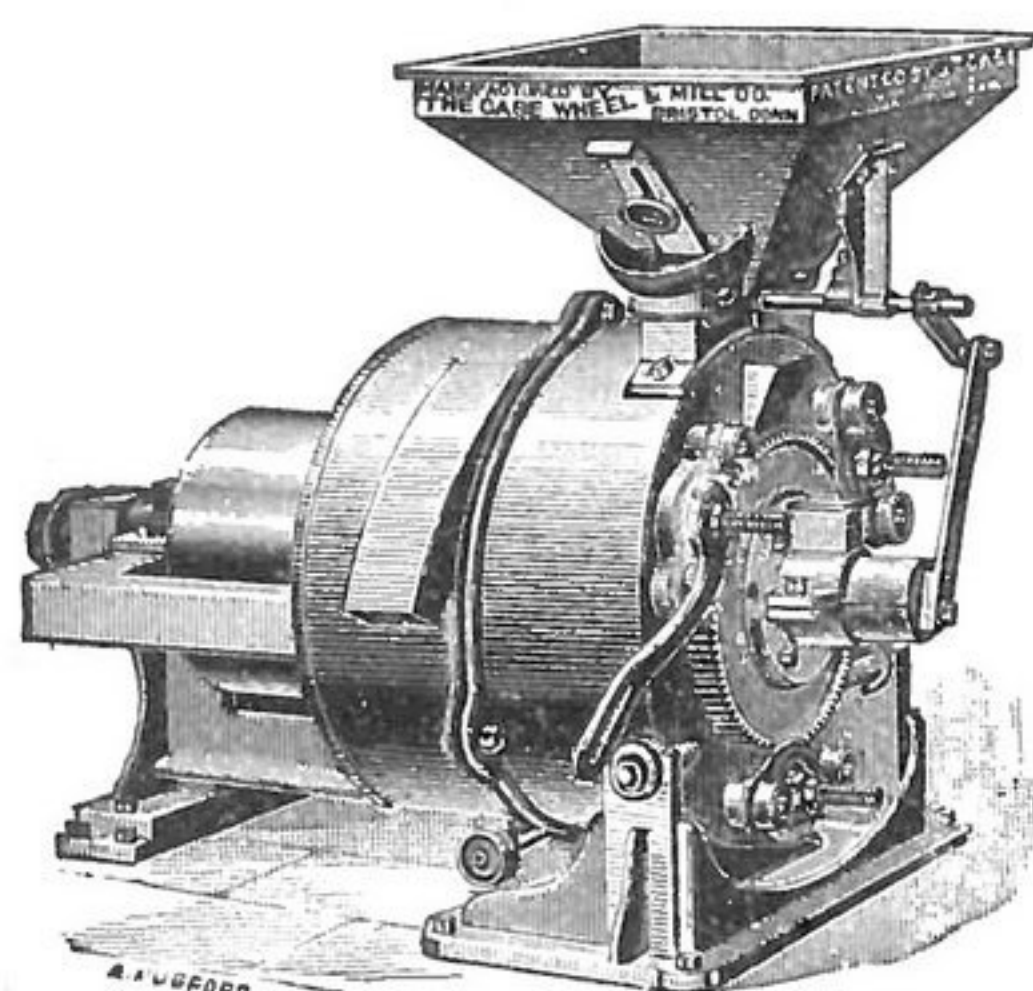
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXI. No. 24.

BUFFALO, N. Y., FEBRUARY 10, 1890.

\$1.50 PER YEAR.



## VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS.

(J. T. CASE'S PATENT.)

### FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

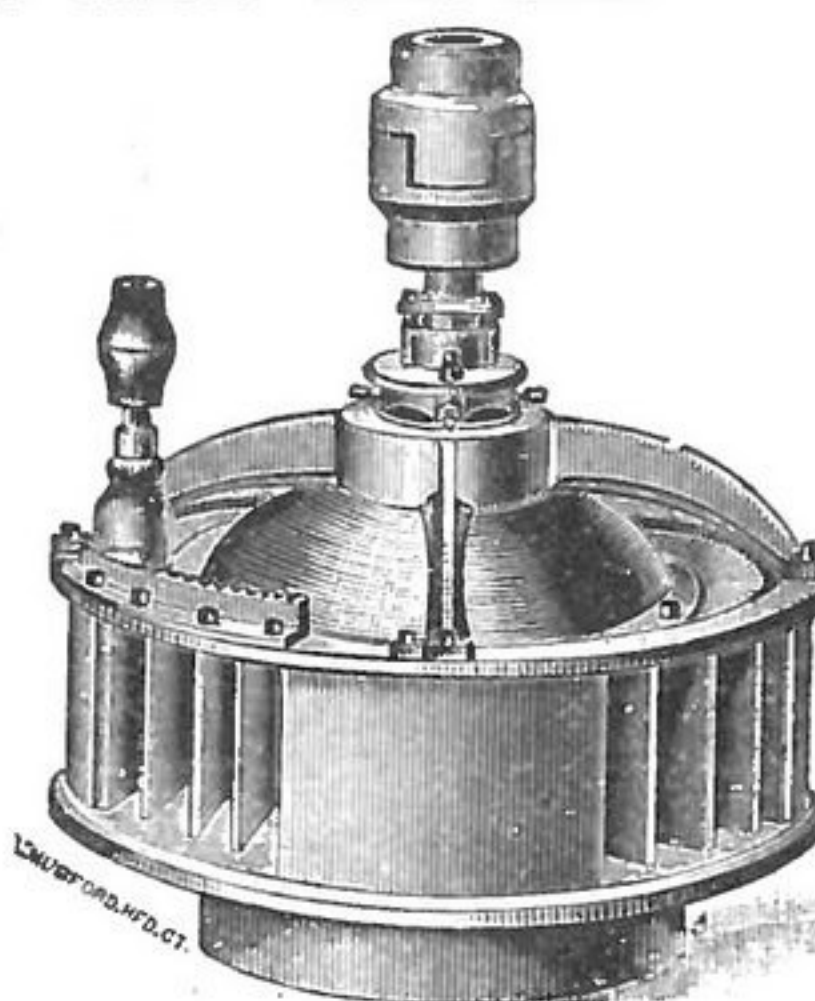
"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.  
 "Superior to any mill in use."—GEO. WESTON, Bristol, Conn.  
 "The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.  
 "We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.

SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

## The Improved National Turbine Water Wheel

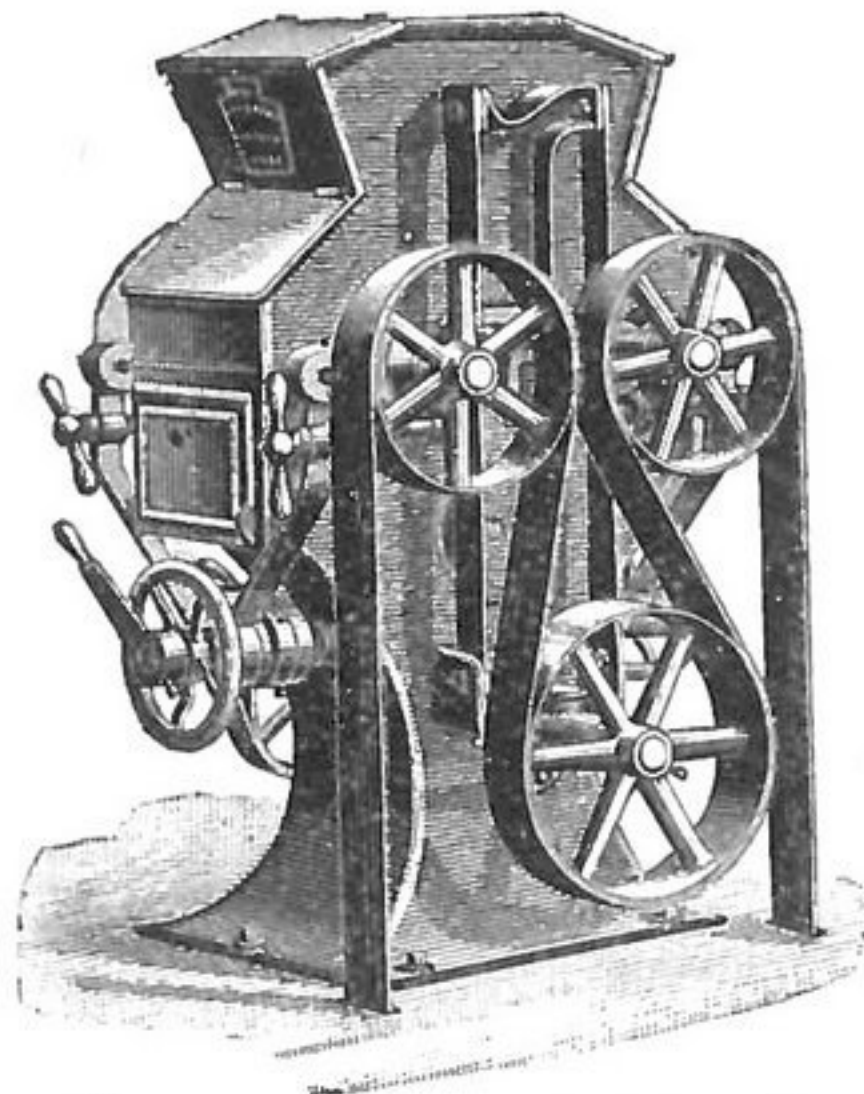
The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.

**The Case Wheel & Mill Co., Bristol, Conn.**



## THE "KEYSTONE" ROLLER MILL BEATS THEM ALL.

### THE PROOF.



THE J. B. ALLFREE CO.

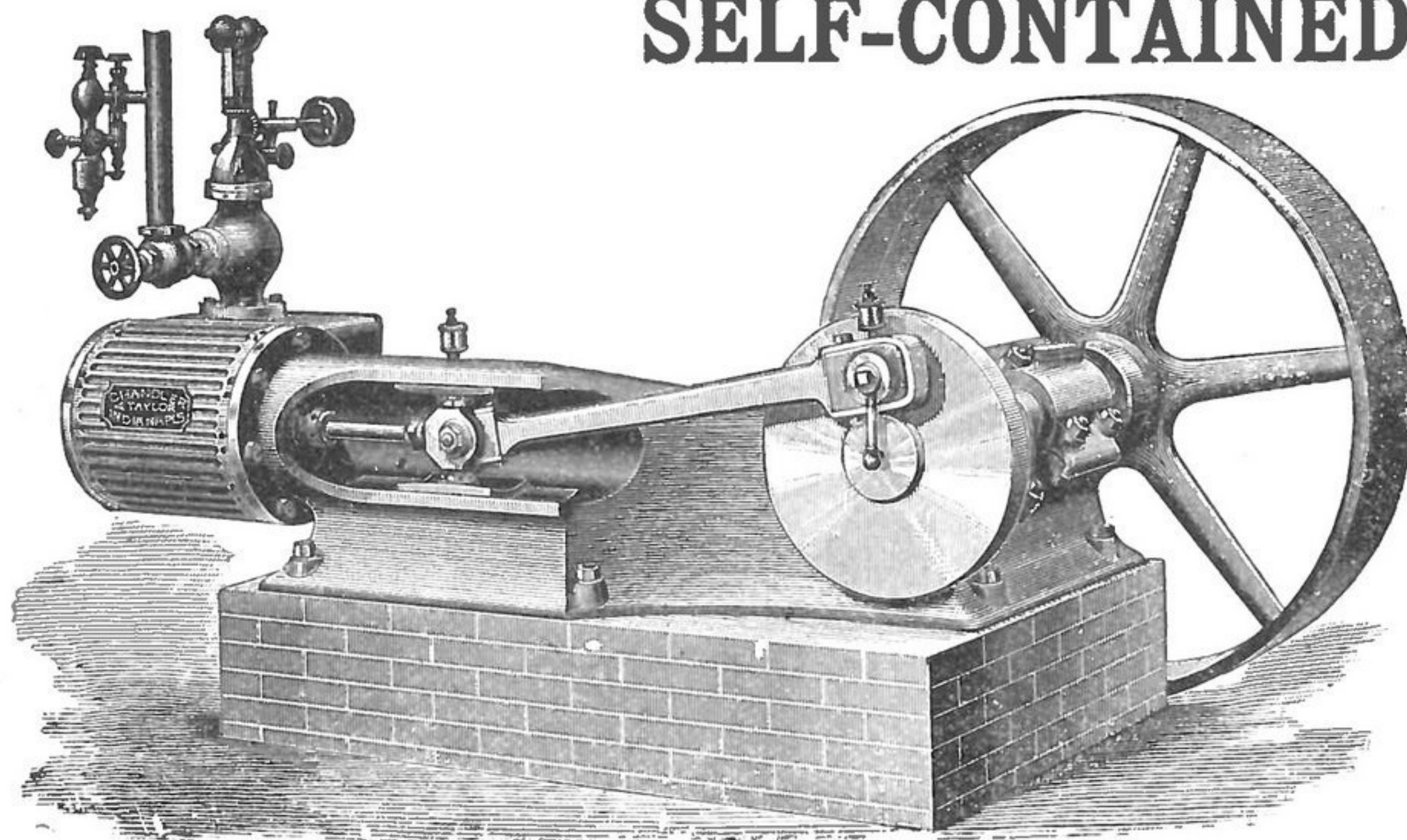
DEAR SIR: It has been a year since we started up the 50-barrel mill you built for us. We make four breaks on wheat, and will just say that we never, in our lives, seen or used any machinery for the manufacture of flour equal to this which you put in for us. The Roller Machines (Allfree's patent) can't be beat in the world for simplicity of construction. They have the best adjustments of any mill known, and we think we know whereof we speak. We have not had a break nor a jar since we started. We defy any man, or set of men, to produce a system of separation that will beat the Allfree System. We make two grades of flour which we call the first, or baker's flour, and the other the low grade; and out of the tests we have made, have, on a fair test from 60 lbs. of wheat, 44 lbs. of Crown Prince, or baker's flour, and 2 lbs. of low grade. Our Crown Prince sells a little higher in the market than other grades from other mills, and we have been complimented on our flour quite often, as it is always in demand. It takes less power to run this machinery than any we have seen; it will do more grinding, and do it easier than any mills we have used with the same amount of power. Our mill is built for a fifty-barrel mill. When the wheat is in good condition we make 65 barrels, and do it easy. Our trade has increased from the very start, and we have not had a single complaint. Our stock from this mill is always in demand, and we will say that if our brother millers want to get what there is in the wheat out of it, and get a flour that can't be beat anywhere, they had better adopt the Allfree System, for it will save them money dead sure. On the Allfree Rolls we have a double adjustment; we can set both ends of the rolls separate from each other, or, with a single hand wheel, change the whole roll at the same time. The adjustments on these rolls are worth two other makes, and if there is any miller who doubts this let him come and visit us and he can see for himself; we will take pleasure in showing any body that will come and see this mill work. Millers are always welcome.

We remain yours,

DAVIS & CLARK.

—ADDRESS—

**THE J. B. ALLFREE CO., 76 to 86 Shelby St., INDIANAPOLIS, IND.**



## SELF-CONTAINED STEAM ENGINES Stationary or Semi-Portable.

High Standard Maintained.  
Prices Greatly Reduced.

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**Chandler & Taylor Co.**  
**Indianapolis, Ind.**

Engines, Saw-Mills and Drain Tile  
Machinery a Specialty.



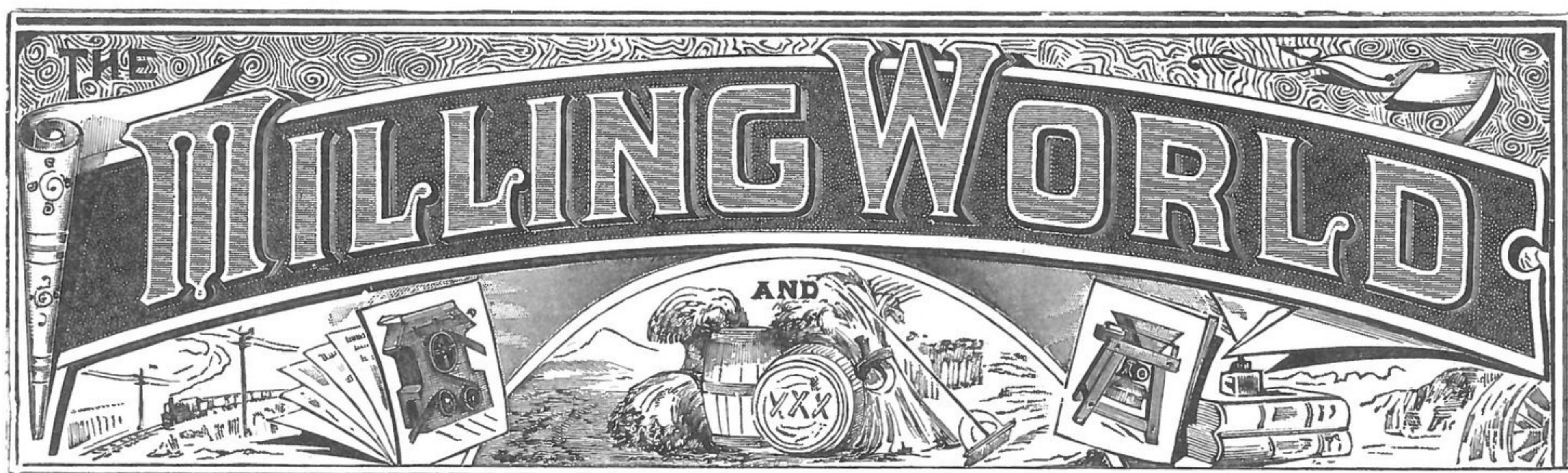
# CASE.

CASE MFG. CO., COLUMBUS, O.  
GENTLEMEN: If we were to build a hundred mills we  
would not permit any other than the "CASE" roll to  
enter them. They are the best roll on earth.  
Yours truly,  
W. C. MANSFIELD & CO.

W. C. MANSFIELD & CO.,  
MERCHANT MILLERS,  
CLEVELAND, TENN., AUG. 29, 1889.

# CASE.





CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING

VOL. XXI. No. 24.

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WHAT? Two whole state associations of millers met and parted without "endorsing" the attack of the Minneapolis "Yahoo" on the Richmond flour market? What's up? Do the state associations "smell a rat"? Or has the "Yahoo" decided to give up its fool game of trying to force decent men to "endorse" actions that are not decent?

EFFORTS are being made to introduce American corn into England as a food. It is announced from London that the American Indian corn exhibit, under the management of Charles J. Murphy, that was to be given at the Paris Exposition, will take place at the Edinburg Exposition, which opens in May next under the management of S. Lee Bapty, who was the director-general of the Manchester Exhibition. The Lord Provost of Edinburg and Sir Thomas Clark, chairman of the executive Committee, have taken a lively interest in favor of showing the people who will visit the Exhibition the merits of Indian corn as a human food, of which they have heard so much and know so little.

THE Illinois State Board of Agriculture makes the startling statement that the 247,989,589-bushel corn crop of Illinois in 1889 cost \$68,272,872 to grow, while its market value is estimated to be only \$58,337,047, implying an actual loss of \$9,935,825 on the work of the season for the corn-growers. According to the statements of 1,600 correspondents, there are 22 of the corn counties that cleared a total profit of \$2,626,304 on the season, while the remaining 80 counties lost \$12,562,157. In making the estimate of the cost of production, the board allowed 7 per cent. on the money invested in the land. At this rate Illinois would better abandon corn and turn to huckleberry culture.

THAT Manitoba wheat "corner" continues to dwindle. Late reports had whittled the amount from 4,000,000 down to 400,000 bushels, and now a Winnipeg correspondent of our Toronto cotemporary says: "Some tall reports have been sent out of big wheat deals, corners, etc., in Manitoba wheat. These reports have been considerably exaggerated. Several purchases of considerable quantities of wheat have been made, but not to the extent reported. The situation as regards these alleged corners has already been pretty well explained by what has been said in this letter regarding the high prices being paid here for wheat. Millers finding themselves short of wheat, and with indications that the quantity held by the farmers was nearly exhausted, turned in and bought up all the wheat they could get hold of at big prices, both from farmers and grain dealers. One or two purchases made from dealers were for amounts in excess of 100,000 bushels. This is about the extent of the reported corner." Well! The Canuck prevaricator can simply give his Yankee competitor points and then beat him out with shameful ease!

NOTWITHSTANDING the alleged herculean efforts of the Millers' National Association to better the condition of the milling trade, to bring the millers of the United States together, and to revolutionize things generally, the field shows no signs of improvement. There never was a time

when the various phases of the milling interest were less harmonious or more discordant than they now are. The most charitable observer, who looks over the field intelligently, can not discern the "incalculable benefit" bestowed upon the milling trade or upon millers by the national association. The managers cry "Peace! Harmony! Progress!" But neither of the three is visible. They cry: "Come in, every miller in the land!" But their convention orators take particular pains to insist that the association plans and proposes to care for the interests only of the few millers who grind 200 barrels or more a day. So the men below that notch remain outside. The managers profess to work for the general good. But an important State association belonging to the National association votes to "endorse" a malicious attack on a single flour market. The managers claim "great growth" for their association during the past year, but no one knows the real number of members in the association. The number can not be very imposing, or else it would be shown. It is announced that a steady stream of members is pouring into the concern. It is quite safe to say that, as they pour in at one end, they pour out at the other end. Next summer the association, at the annual convention, will be plastered up, braced up and furnished with a "new constitution." It needs it. It needs a new association more.

ANOTHER double-and-treble-and-vigintuple-compound-back-action wheat bugaboo is looming up in the Argentine Republic. English journals print a letter, written at Buenos Ayres on the 18th of December, which says: "If the present favorable weather holds for a few weeks, there will be available for shipment to Europe a large surplus of wheat, of which the quality will astonish many millers, but the first word of this sentence must be writ very large. Statistics are impossible in a widely scattered country where the poorest sort of cultivation can produce great crops in a very short time if seasons are favorable, and where it is nobody's business to collect and publish information, and I have so far heard no guesses at the quantity of wheat for export. There is, however, no difference of opinion as to quality, and I have already seen samples that will rank with the finest wheat in the world." Of course! Of course! We have already pointed out repeatedly that statistics from the Argentine Republic wheat districts are wholly imaginary and unreliable, and that, coming through English channels of guessing, compiling and manipulating, they are open to suspicion of bearishness, and we believe the present bugaboo statements concerning both quantity and quality to be decidedly fishy. All the reports up to nearly the beginning of the Argentine harvest indicated generally unfavorable conditions. There were insect pests in some sections, drouths in others, floods in others, frosts in others, and increased acreage or phenomenally favorable conditions in none. Yet here come the English "bear" reporters with a magnificent crop of unexampled excellence! We prefer to "bide a wee." Our faith in crop liars is exceedingly slim. A "great" crop on paper will not materialize on Argentine soil this season, and as for ranking the Argentine wheat with Dakota, Minnesota and other American grain—O! no!!



# Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

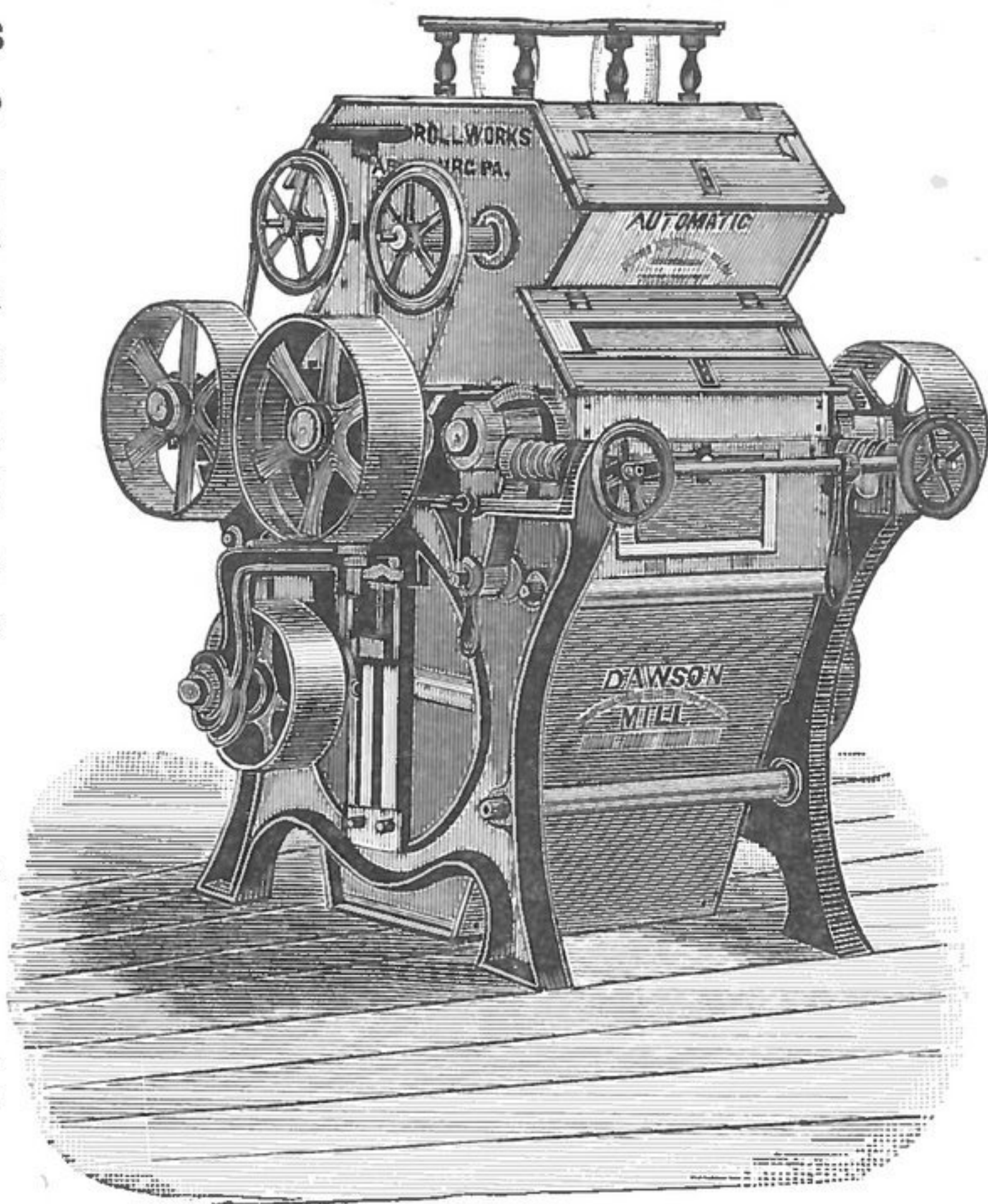
*We have a large plant to Re-grind and Re-Corrugate Rolls.*

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.

FOR PRICE LISTS AND CIRCULARS, ADDRESS,

## Dawson Roll Works, Harrisburg, Pa.



## The Cowles "Reliable" Sectional Wood Pulley

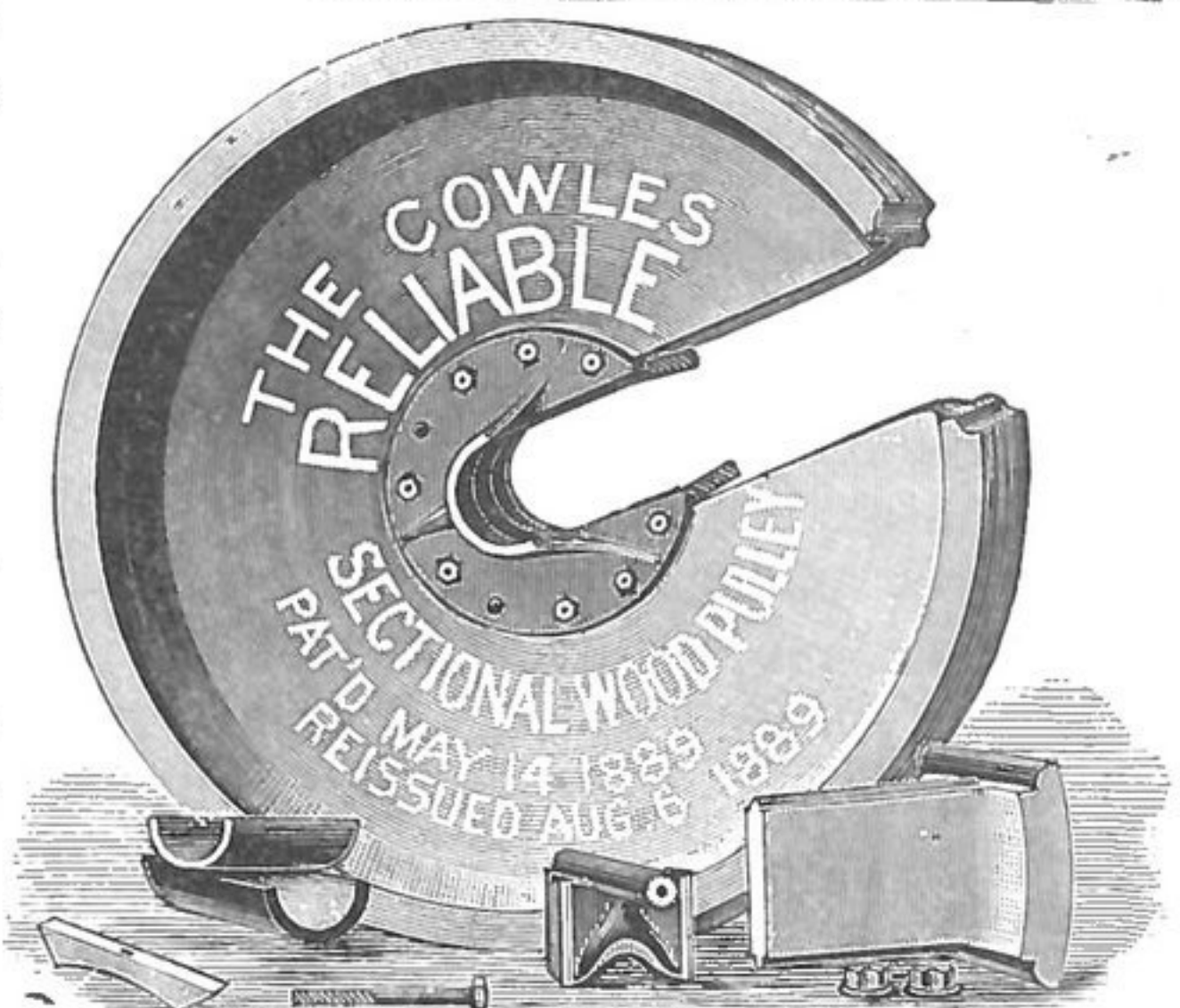
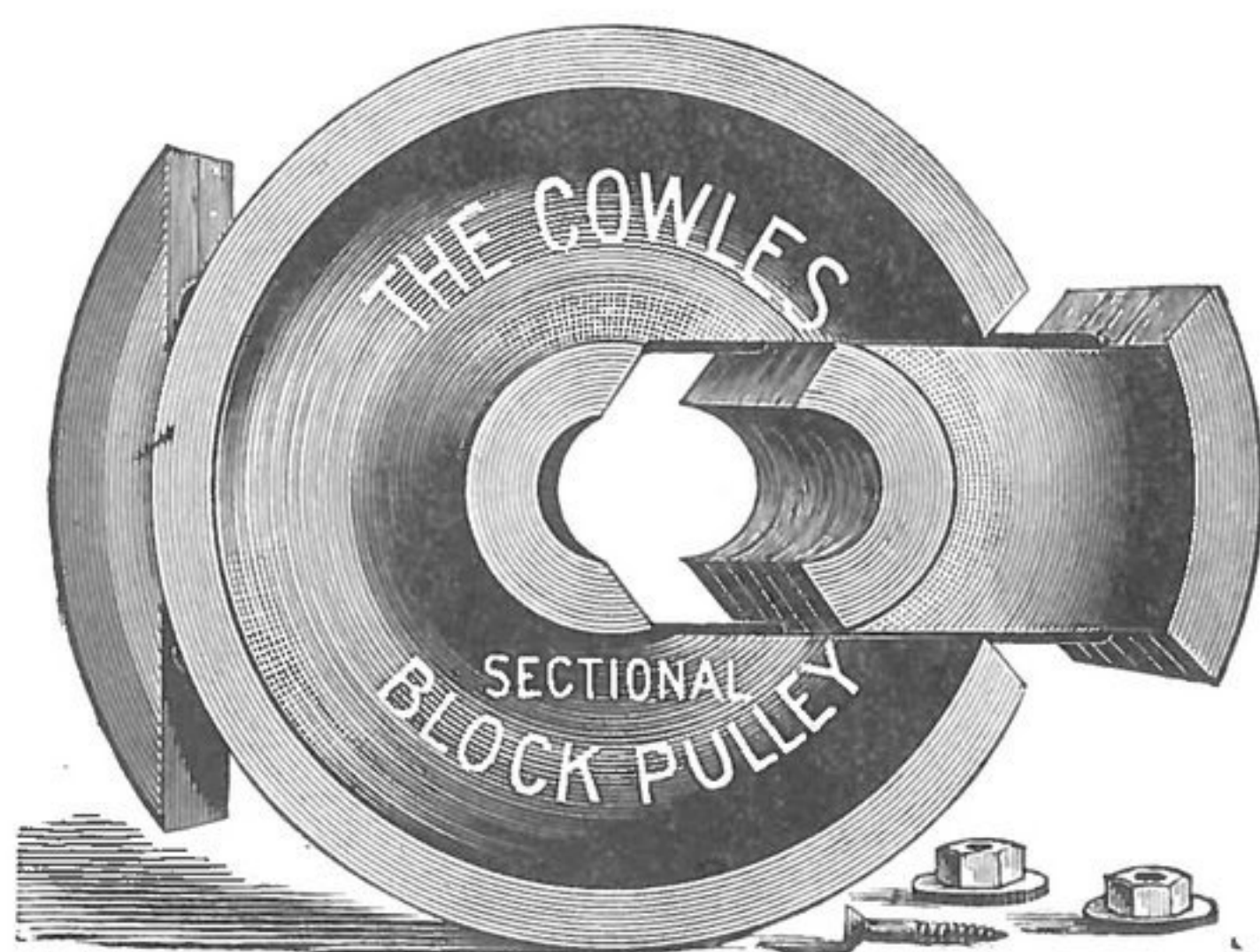


Web made of several layers glued together with grain crossing, and faced up on both sides. Iron flanges securely bolted to web. Rim put on after web has been trued up. Web and rim turned on inside and face, making perfect running pulley. Rim supported entire circumference. Positive self-gripping device for securing pulley to shafting, which is self-centering, and can not slip with wear.

A wooden rim pulley transmits from 30 to 50 per cent. more power with same belt than an iron one.

Two-thirds lighter than iron, bearings will wear longer and the expense for lubricant will be less.

Having solid web, there is no air resistance. The "Reliable" can be placed on shaft or position changed in one-fourth the time required with any other pulley.



**EDWARD GERMAIN, SOLE MANUFACTURER SAGINAW, MICH., U.S.A.**



# **THE MILLING WORLD**

AND  
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,  
Over Bank of Attica.

McFAUL & NOLAN, - - - PROPRIETORS.  
THOMAS MC FAUL. JAMES NOLAN.

## **SUBSCRIPTION.**

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in unregistered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

## **ADVERTISING.**

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

## **EDITOR'S ANNOUNCEMENTS.**

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

**THE MILLING WORLD,**  
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

## **SITUATIONS WANTED.**

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

## **WANTED.**

A situation in some flouring or grist mill, by a man who has had good experience with the buhr system. Can furnish best of references. Address, THOMAS H. NICHOLAS, DeRuyter, N. Y. 2225

## **SPECIAL ADVERTISEMENTS.**

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office 10 cents must be added to pay postage.

## **FOR SALE.**

Mill property in Central New York, for much less than it is really worth, with small payment down, or would take a partner with small capital to take charge of and run the mill. Address "B," care of THE MILLING WORLD, Buffalo, N. Y. 2024

## **FOR SALE OR TRADE.**

For a good farm, Mill Property in Northern Indiana; has been overhauled within three years, with all new machinery. Good water-power and splendid custom trade; 2½ miles from station. Has three run of stones. Address, "Z," care of THE MILLING WORLD, Buffalo, N. Y. 24

## **FOR SALE.**

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

FLENNIKEN TURBINE CO.,

8tf

Dubuque, Iowa.

## **MILL MACHINERY FOR SALE.**

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.

One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.

One 14-Inch Vertical Feed Mill; best make, new, a bargain.

One No. 6 Dustless Separator; new, a bargain.

One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.

Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.

Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.

One No. 2 Purifier. New. Best make. A bargain.

For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

## **FOR SALE CHEAP.**

One 36-In. Iron Frame Portable Mill, French Burr Stone, Used about 2 months.

One 20-In. Vertical Mill, French Burr Stone, Used about 30 days.

Three Pair 42-In. Old Stock Feed Stones.

FOR PARTICULARS ADDRESS,

**SAMUEL CAREY, 17 BROADWAY, NEW YORK.**

## **FOR RENT.**

Clinton Mills, at Black Rock, Buffalo, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 311 Main Street, Buffalo, N. Y. 6tf

## **FOR SALE.**

Flour and feed mill, with water power and three run of stones, for sale cheap; also dwelling house and garden. Situated half a mile from depot on New York and New England R. R. For particulars, address, MRS. M. E. DOUGHTY, Green Haven, Dutchess County, New York. 2427

CANADIAN reports announce that the authorities, to whom application has been made by Canadian millers for equalized duties on imported wheat grain and flour, claim that they are ready to give serious consideration to the application. Sir John Macdonald, who runs the entire Dominion government as he wills, pretends to be now for the first time in possession of the knowledge that will enable him to adjust the tariff intelligently and satisfactorily to all interested.

If the editor of the St. Louis "Merchant, &c.," finds it delightful to toot for the "national," we find no fault, but if the editor of that crazy journal proposes to draw us into a contest with himself, he will have to present some more potent excuse than the "national," and he will have to use a more dignified style than he shows in his latest colicky squeal. Reading that squeal, one can hardly decide whether the editor who wrote it is a dolt, a loafer, or simply pure and unadulterated tacky white-trash, and we never measure quills with members of either of those classes. The St. Louis person may classify himself. He has the floor. Nature has made him master of the situation by endowing him with qualities that make him an unpleasant thing to observe, even at a distance. He rivets attention principally as other mephitic creatures do.

EVEN the British grain-trade journals begin to ridicule "prophets" of Great Britain, who have within the past five years repeatedly asserted that India would prove to be able to furnish Great Britain and Europe all the wheat they could use, and even supply the United States with wheat when her productive capacity falls behind her consumptive capacity. At the close of the year 1889 we were to see Europe independent of the United States in the matter of wheat supply, but the prophecy has gone astray. At the beginning of 1890 Europe needs more wheat than ever before from the United States. India has fallen by the way. Ryot labor has been proved incapable of greater results. Sterile India has shown her inability to compete with fertile countries. Railroads built in India have failed to swell the crop of wheat. Insect pests run riot there, just as of yore. Drouth continues to mock at "British enterprise." Vast promises have failed to fruit. India exported 42,292,000 bushels of wheat in 1886. That achievement set Great Britain wild. Then every thing was translated to mean that India could jump to 60,000,000 bushels, to 80,000,000, to 100,000,000 bushels of surplus wheat, and, presto! Great Britain was at once and forever free from Yankee wheat and flour! Then came the Indian export 28,072,000 bushels in 1887, and the British prophetic optic opened a little. Then came 1888 with the Indian export of 30,664,000, and the British prophet rubbed his optic in amazement, as 1888 had been set for 80,000,000 bushels. Then came 1889 with only 26,640,000 bushels, and the British prophet went to bed with his prophetic optic done up in soothing oysters, and the British public are laughing at him mercilessly. Another unfavorable element in the Indian situation is the steady and decided decrease in the use of the Indian trash by Continental Europe. In 1886, after several years of wholesale boasting about the quality of Indian wheat by British boomers, Europe took 20,264,000 bushels of the amount exported. It did not answer the representations of the boomers, and in 1887 Europe cut her portion down to 13,848,000 bushels. In 1888 she cut it down to 12,528,000 bushels, and in 1889, when, with badly shortened crops she would need it, if ever, she took only 8,232,000 bushels. So the Indian wheat bugaboo totters along. The Indian exports of wheat have lost 38 per cent. in four seasons. European millers on the continent have reduced their takings of Indian wheat by 60 per cent. during the same years. Crop prophets seem to be of the same kidney the world over.



## THE FIRST BREAK.

J. MURRAY CASE.

## III.

There is probably no one point in milling upon which there has been more dispute than the first-break. To accomplish this break has lead to a great variety of machines and different styles of corrugations, foremost among which are the seven designs illustrated. A number of years ago a craze ran through America among the stone millers to put in a "degerminator," a machine calculated to split the wheat berry and remove the germ and seam impurities before sending it to the millstone for grinding. The theory was that the germ and seam-dirt produced the dark color in stone milling, and, this being removed, the stone miller might be able to make a whiter flour, that would enable him to compete with roller-milling. The bait was a very tempting one, and of course very many millers bit at it. Some of the more ardent advocates of this system made ideal illustrations in which the wheat berries were shown split beautifully through the seam and lying complacently on their backs, while the liberated germs were jumping out like fleas from a London boarding-house-bed on a July morning.

This looked very nice in theory, but in practice it was found that only a small percentage of the germ was thus liberated. Then brush-scalpers were brought out to give the wheat a brushing after being split, for the more complete removal of the germ and seam-dirt. This system met with many advocates, and many machines were sold for the purpose. But even with the most severe brushing not more than half the germ was removed, as in most varieties of wheat it clings tightly to the end of the berry and will not come out until the bran is thoroughly opened. Besides this, in the use of a brush the grains of wheat, opened but not separated in halves by the break-machines, were thus brushed asunder, when the broken edges of the wheat came in contact with the brush and scalper, and the percentage of dark flour was thus very greatly increased, sometimes quadrupled, which made it an expensive and wasteful system, and therefore impractical. Besides this, when the wheat berry is separated in halves, it is questionable whether or not about as much impurities will gather in the recesses of the fracture, and thus be borne along to the next break, as are removed from the seam. At any rate, the system of splitting and brushing has so many disadvantages that it may be regarded practically abandoned, and the best evidence of this is that a majority of the machines originally put in for this purpose are now standing idle, and no prominent builders are now offering them to the trade, although a few of the smaller ones are still undertaking to sell them.

I was one among the first to build a wheat-splitting machine as a specialty in America, brought out in 1879. I constructed a number of varieties, or designs, nearly all of which designs have been copied in the various countries of Europe and are probably being built more extensively than any other machine for the purpose. My experience with first-break machines has probably been as extensive as that of any milling engineer, I say this without personal vanity, and I may, therefore, be presumed to speak with some degree of authority on this matter. I early discovered that the advantages hoped to be attained in stone milling by the use of the first-break did not extend beyond what additional cleaning the wheat berry got by the jarring and scouring action of the break machine and scalper; that the degerminating motion was a delusion, and that the "seam-dirt" did not exist in clean wheat to an extent capable of producing a perceptible difference in the color of the flour. And though I was at that time building a break-machine and scalper, for which we had a ready demand at large profits, yet I did not advocate it further than a wheat-cleaner, and never have. But so rooted had become this notion of degerminating in the minds of the stone millers that they would have the machine; and so my company built it and sold it, but always, if possible, in connection with a bran and smooth roll, from which the miller obtained considerable benefit, although he might be laboring under the delusion that his benefits came principally from the first-break and scalper. He was

satisfied and paid for his machines, and the Case Company sustained their credit and position, and made money.

This "seam-dirt" and "degerminating" theory has impinged itself upon the French stone millers, and quite a number of machines are being built and sold there for this purpose, among which is a duplicate of my own machine. In France, where they have a cleanly-harvested wheat, and of excellent quality, there can be no perceptible advantage where suitable wheat-cleaners are used. I do not wish to be understood to be opposed to the use of a first-break machine, under certain conditions, and to the advantages to be derived from it under such conditions; but I desire to take a comprehensive view of the entire subject in all its bearings, so far as I can in a limited article. The staunch advocates of the "seam-dirt" theory will show you the flour made from the first-break, and in a voice of triumph will remark, "You don't want that in your flour, do you?" Of course we do not; but it must be remembered that the dark coloring matter does not necessarily come from the seam.

Upon analysis, when the wheat has been well cleaned before breaking, it will be found that the coloring matter consists principally in particles of bran scoured off in the break-machine and scalper. Pass the wheat through the break-machine without splitting it, and then through the scalper, and you will have the "dirt," minus the flour, made when the wheat is split; try it. The blue color of the flour is due to mill-dust in spouts, and smoke in the mill, and settlings on the wheat when it is not properly covered after cleaning. It only takes a trifling amount to produce the blue color, since generally this is not found to exceed 1 per cent. of the offal made. The advantage to be derived from a first-break machine is purely that of a final wheat-cleaning. The first-break adds nothing to the capacity of the succeeding break-rolls. It therefore becomes a question as to what system is the best to use to produce the best cleaning with the least waste.

In the cuts I give seven different styles. The double arrow indicates the fast roll. Fig. 1 represents a fast roll with one-half-inch cut operating against a smooth surface. This smooth surface may be either a stationary roll, a movable roll, or a plain chilled-iron block. If the smooth roll is made to move, it should be as slow as possible. The fast roll may be run at any desired speed, from 250 to 800, there being no pressure of any consequence on the bearings, and consequently the bearings will not heat. A small machine, by speeding up, may be made to do a great quantity of work. Each tooth forms a hammer and strikes the grain similarly to what may be done with a small tack-hammer by hand, and the effect is substantially the same. The berry opens out at the weakest point, which is the crease, and if only gently touched, only a small percentage will be separated in halves, and consequently in sending to the scalper there is no scouring action on the fresh broken parts of the wheat, and therefore only a small percentage of flour is produced. This plan, however, has one disadvantage, and that is if the machines are set close, so as to produce a complete opening of all the grains, it will soften to some extent the middlings, so that less semolina is made, and there will be greater difficulty in making a clean finish of the bran. It is a principle not known to all milling engineers and millers, that to bruise the gluten next to the bran will make the bran much harder to clean, therefore in the use of this principle it should never be set close enough to soften the berry.

Fig. 2 is a similar machine to Fig. 1, but has a corrugated instead of a smooth roll. This is a better design for soft wheats, although the split will not be quite so good, and more flour is made, yet there is less pressing action.

Fig. 3, either as one-fourth or one-eighth cut, is in extensive use. It produces a much larger percentage of flour than Fig. 1 and breaks a large percentage of wheat crosswise, especially hard wheats. It has the advantage of not softening the wheat, but will not make so broad a bran.

Fig. 4 has been used to a large extent by the dull-tooth advocates in milling; but I have found it decidedly objectionable, as it both bruises the wheat and shatters the bran and makes it more difficult to clean. It also injures the

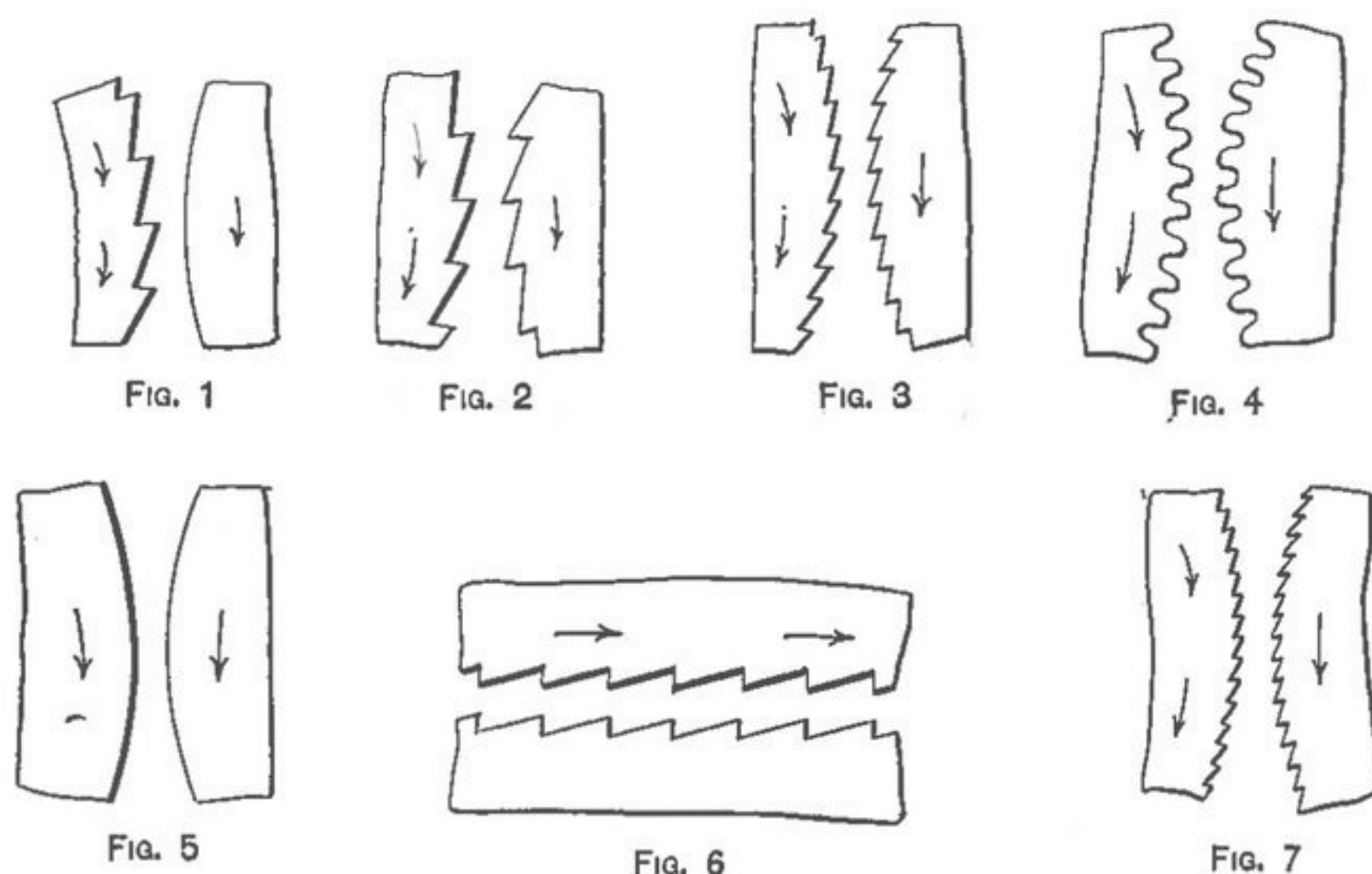


middlings greatly by the softening, crushing action, leaving them in a shattered condition.

Fig. 5 represents two smooth rolls running at equal speeds. This has been experimented upon by a great many of the uninformed, but has met with no favor. It softens the middlings, increases the break-flour, makes the general results throughout the mill softer, increases the fine pollard, makes the bran harder to clean, and is objectionable every way.

Fig. 6 represents a disc-machine, of which there are a great variety, but all work on substantially the same principle. If there is but a small amount of corrugated surface on the purifiers, they will make a fairly good break. The action on the wheat is somewhat similar to that produced by Fig. 2, and the break looks much the same, except that Fig. 6 will separate more of the grains in halves, and, being held in the disc longer, there is a greater scouring action and consequently more flour made.

Fig. 7 may represent a first-break where no splitting is attempted, and where the wheat is broken down at once, and a large proportion of coarse semolina made. In ordinary practice a twelve cut is used, cut deeply, and back of tooth running against back. If the wheat is perfectly clean and dusted over a wire reel before going to this break, it will produce results just as good as to pass it through the first-break machine and split the wheat. Some of the largest mills in America are running in this manner, making only three and four breaks. It can not be successfully contradicted that a larger percentage of coarse semolina can be made, and of a far better quality, when wheat is reduced down to about the ordinary third break at the first operation, or I may say between the second and third. That



is to reduce it sufficiently that the bran is fully opened and germ relieved almost entirely.

There can be no objection, however, for the miller to have in a first-break wheat-splitter. He can then use it simply to jar the wheat, and then in passing the scalper the surface dirt is removed, and in passing to the next pair of rolls operate upon it as above specified. Then whenever there is a batch of very dirty wheat the break-machine may be set up and the wheat opened. In small mills, however, that run exclusively upon native wheats, either in this country or on the continent, it will not generally pay to put in an extra roll, extra elevator and extra scalper for this purpose. There is still another style of first-break corrugation, which I have used in two, three and four-break mills to great advantage, which I have not here illustrated, for the reason that patents are now pending upon it.—*London "Millers' Gazette."*

#### WHAT DOES THE "NATIONAL" PROPOSE?

Amiable but thoughtless advocates and defenders of the Millers' National Association will find it hard to defend and advocate the proposed new constitution of that organization. For instance, the fifth section of the second article reads: "Members of this association may send one delegate to the annual meeting, who shall have power to cast one vote for each unit of capacity (100 barrels) or a fraction thereof, represented by their membership certificate."

We invite the particular attention of our Kansas City contemporary to this peculiar clause, according to which a 100-barrel mill would have one vote, a 200-barrel mill 2 votes, a 1,000-barrel mill 10 votes, a 5,000-barrel mill 50 votes, and a

7,000-barrel 70 votes. Now, what is the object of giving the larger mills such a leverage as is indicated in that scale of votes? Minneapolis rules the present association, and Minneapolis proposes to rule or ruin it. That city has a capacity of nearly 28,000 barrels a day, calling for 280 votes in the association, all controlled by two or three men, whose interests are identical and who will vote as one man. Adding the capacity of St. Louis, Milwaukee and several other milling towns engaged in exporting, it will be seen at a glance that at least 350 votes in the association will be cast as the vote of one man. Of course the small miller will be at even a greater disadvantage under the new constitution than under the present one. In other words, he is to count for nothing in the "national." The total membership is probably not 200, even now, after all the "enormous" gains and the "phenomenal growth" of the past year. In order to even up things it would be necessary to induce about 400 or 500 small millers to join the organization, but the small millers can see that they are not wanted, and therefore they will not thrust themselves in.

Again, article three says in the second section: "Each state is entitled to one director for each 250 units of capacity (25,000 barrels) or fractions thereof represented by its members in the Association, and the board of directors shall consist of as many members as the States may elect on this basis of representation." What does this mean if it does not mean that there are several whole States that are not wanted in the "national"? There are many States that would have no directorial voice in the association under the rating in that clause. Having in the first rating rendered the small millers of the great milling States absolutely powerless in the "national," the creators of this proposed new constitution, Messrs. Albert C. Loring, M. S. Blish and Henry C. Yaeger, propose in the second rating to render equally powerless all the millers of several small milling States and Territories.

As plain as the nose on a man's face is the implication of all the acts, deeds, utterances and propositions of the "national" managers that they are not paying the slightest attention to small millers, or even to small milling States. They openly preach the gospel of Big Fish versus Little Fish. Singularly enough, certain milling journalists pretend to be unable to see the implications of the situation, and they go on claiming that the "national" means one thing, when all the time the "national," by every means of expression at its command, loudly proclaims that it means to do the opposite thing. It is a comical situation all around. We can admire the frank brutality of the "national" managers in all their propositions and utterances, as they show at least the courage of their convictions and the perfect selfishness of their narrow conduct, but we can hardly "size up" the journalists who pretend to see in their narrow selfishness any promise of good things for the small millers of the United States. We advise some of our contemporaries to study carefully that proposed new constitution, particularly in those points wherein it trenches upon matters outside the small circle of the millionaires who propose to make the "national" even less worthy of that name than it has been and now is. If they do not, after such study, revise their opinion of the "national" and its aims, we will go on a diet of fluff and red-dog johnnycake for a month!

#### POINTS IN MILLING.

COLOR-BLINDNESS is a bad thing in a miller, and it is far more prevalent than millers generally suppose it to be. Among other things noted in my travels among the mills is the inability of many practical flour-makers to decide exact shades of colors. I have a glass-faced box, containing six compartments, and in the compartments are samples of flour, ranging in color from the whitest white down to a disreputable yellow, and I have shown it to many millers.

ONE man could not distinguish at all between the highest and the lowest colors. A second could not distinguish between the first and the fourth, although the difference is nearly as great as between the white and the yolk of an egg.



A third considered the first, second and third in one color group, and the fourth, fifth and sixth in another group, distinguishing only two shades where there are six distinct ones. One man could not see the specks in one sample, although they are numerous, decidedly dark, and show clearly against the yellow mass.

ONE man was able to see a difference when the samples were placed in the rays of the sun, but he could detect no difference when the samples were placed in reflected light. This man saw no difference when the samples were placed against red, or green or yellow backgrounds, but he could see some changes when the background was white or black. Occasionally a miller was able to detect all the shades of colors in the samples, but it seemed to me that most of those who looked at the case of samples were deficient in color acuteness of the eye.

It is said that the Asiatic makers of camel-hair shawls have wonderful acuteness of the sense of color, so acute that they can see hundreds of shades of color in one of those somber looking shawls. Our color-blind millers would probably make indifferent shawl-weavers, and the acute eyes of the Asiatic weavers could be put to good use in milling.

HAS this color-blindness a value in milling? Evidently it has, and the value is an evil one. The miller who can not distinguish a pure white from a strong yellow, or dark and red specks from white flour, may send out a flour that is "off" in color, and that flour may come into the hands of a consumer who is not color blind. Then there is complaint. The color-blind miller takes more pains and decides that he has removed the cause of complaint. He sends what he considers good-colored flour this time. It proves to be slightly better than the first sample, but it is still pronounced "off" by the customer. The miller, who is blind to the shades, charges the complaint wholly to the capriciousness of the customer, who is not thus blind. Even when confronted with specimens of the faulty flour, the color-blind man can not see the difference between its shade and that of flour of the best color, and his inability to make the distinction places him in a most unpleasant quandary.

THE dispute ends. The miller decides that the customer is a capricious, unreasonable, finicky, over-fastidious and probably insane person. The customer decides that the miller is either too stupid to tell black from white, green from blue, red from yellow, or bran from flour, or else too hopelessly pig-headed to own that he is wrong, even when he holds in his hands the proof of his error. The customer goes elsewhere for supplies.

IN case the customer is as color-blind as the miller, the dispute is transferred a step further, to the consumers. Then the customer sides with the miller, the consumer finds them both wrong, they find the consumer wrong, the customer continues to buy of the miller, and the consumer goes elsewhere. In any case the miller who is color-blind loses in the end, as his product is set aside for some one's else.

RAILROAD companies are subjecting their engineers, conductors, brakemen, firemen and flagmen to examinations in color, and their work has shown that very many men are totally color-blind and unable to tell one color from another, no matter how marked the difference. The man who can not tell a green light from a red or yellow one, or a white flag from a red one, is certainly not a safe man to put in charge of switches and trains, as his defective vision will surely cause destruction of property and the loss of life. A man who can not tell Auld Lang Syne from Yankee Doodle, nor Old Hundred from Johnny, Get Your Gun, would be a curious man to select as a music-teacher. Yet the color-blind railroader and the tune-deaf music-teacher would be quite as safe and profitable employes as the color-blind miller.

MR. OWNER, did you ever, in cases of complaint about

"off-color" flour, trace the trouble to your foreman? Did you ever narrow a disputed case down to the "tis" of the complainant and the "tis n't" of the defendant? Look to the eyes of the men to whom you trust your grading of grain and flour. You may hit upon some interesting optical phenomena, which may explain a troublesome situation completely, if not satisfactorily.

#### MILLING PATENTS.

Among the patents granted January 28, 1890, are the following:

John J. Chapman, Nebletts, Va., No. 420,185, a millstone-dressing machine, comprising the combination, with the main frame, the shafts journaled therein and provided with sprocket-wheels and cranks, and the frame carrying the dressing-tools, of the telescoping hangers composed of two sections, which have their outer ends pivotally connected with the cranks and the said frame and which have the inner end of one section slotted and united by a yoke, and the inner end of the other section passing through the said yoke and provided with a head, and mechanism for rotating the shafts upon the main frame.

Frederic A. Lockwood, Boston, Mass., No. 420,277 a chain conveyer.

Chas. Hoelzel, New Orleans, La., No. 420,383, a rice or grain pounder.

John J. Horan, Long Island City, N. Y., No. 420,385, a feed-regulator, comprising the combination of the hopper for containing the material to be ground, the feed-passage therefrom, the feed-wheel located in said passage and having pockets in the face, the knocker-wheel attached to the shaft of the feed-wheel, and the knocker acting on knocker-wheel.

Among the patents granted February 4, 1890, are the following:

Thomas O. Perry, Chicago, Ill., No. 420,464, a grinding-mill, comprising the combination of the casing provided with a central circular opening, a stationary grinding-ring secured thereto, a revolving plate provided with a central depression, and a grinding-ring secured thereto, said depression being directly underneath said central opening, with an adjustable circular feed-spout entering said opening and provided with a shoulder whereby by lowering the feed-spout the supply of material is cut entirely off.

Frank Beall, Decatur, Ill., No. 420,507, a roller-mill, comprising rolls for grinding-mills arranged in series of pairs, all the rolls having longitudinal furrows longitudinally corrugated and composed each of an approximately-tangential surface and a surface more abrupt, each pair comprising a slow roll and a fast roll, in the former of which the abrupt surfaces of the furrows are presented in the direction of the roll's rotation and in the latter in a contrary direction, and the proximity of the rolls of the pairs and the size of the furrows being proportionately, regularly and continuously modified throughout the series.

Edgar G. Bailey, Silver Creek, N. Y., No. 420,711, a mechanism for shaking screens, comprising the combination with the eccentric, of a bracket or arm provided with a downward extension which embraces the lower portion of the eccentric and leaves an intervening space in which the eccentric moves freely, front and rear contact-plates arranged in the extension and provided with shanks which are adjustably secured to the bracket or arm, and adjusting screws attached to the front and rear sides of the extension and bearing against the contact-plates.

Andrew Hunter, Milwaukee, Wis., No. 420,723, a scalping and grading device, comprising the combination of a pair of inclined screens with an interposed endless carrying-apron, stationary guides for said apron, and flexible strips secured to the outer surface of said apron on each side along the entire edge.

Stacy B. Hart, Peoria, Ill., No. 420,788, a grain-conveyer, and No. 420,789, a grain-weigher.

Andrew Hunter, Milwaukee, wis., No. 420,802, a scalping and grading device, comprising the combination, with an inclined screen and hopper or feed-spout, of an intermediate



casing having a perforated bottom, a series of adjustable dividing and guiding strips rising from pivoted shafts, locking devices on said shafts, a series of agitating-pins rising from the screen and projecting through the perforations in the bottom of the casing, and a cut-off bar provided with adjusting-screws to vary the size of the said openings in the bottom of the said casing, and No. 420,803, a scalping and grading device, comprising the combination of a feed-hopper, with a feed-roller located in the lower portion thereof, and an automatically-adjustable feed-board extending the entire width of the said hopper and linked to the upper part thereof and normally bearing against the said feed-roller, a cup fitted in the front board of the hopper, a spring-surrounded guide-pin having a head within said cup and a point passing through a hole in said feed-board, and an adjusting-screw passing through a screw-threaded bore in the outer end of said cup and bearing against the head of said pin.

#### A CHANCE FOR MACHINERY MAKERS.

An exhibition of flour-milling machinery will be held at Santiago, Chili, about the middle of September, 1890, where various machines and systems will undergo a competitive trial, the conditions of which are set forth in the following rules:

1. Manufacturers who may wish to take part therein will conform to the rules and enjoy the concessions laid down in the following programme:

2. The association will assume payment of the outward freight to Chili on the mills and fittings for erecting them, as well as return freight to the point whence they are embarked, in case they are re-shipped within the term of one year. The freight payable by the association shall be that payable by sailing vessel from port of shipment, but if the manufacturer should prefer to ship them by steamer, the association will pay such proportion of the freight as would have been payable had they been shipped by sailing vessel.

3. The mills and accessories sent to the competitive trial shall be entered free of custom-house duties, save in the case mentioned in Rule 13.

4. The cost of freight by rail, and such other expenses as may be incurred in the transportation of the mill and accessories from Valparaiso to the place where the competitive trial is to take place, will also be defrayed by the association.

5. The association will furnish the motive power necessary for operating the mills entered for competition.

6. The wheat necessary for the experiments of the competitive trial will likewise be furnished by the association.

7. The association will pay to the manufacturers of mills who take part in the competition the cost of passage by steamer of the workmen who are to superintend the erection and working of the mills.

8. The necessary cost of erecting the plants in Santiago will be paid by the association.

9. Such apparatus as may figure in the competition, independently of the mills, shall not share in the concession mentioned in the 7th rule, nor shall they be entitled to compete for the prize, which shall be exclusively for complete milling-plants. The association will take charge of the working of such apparatus, for which purpose the application for their admission must be accompanied by a set of explanations of their mode of operation.

10. Manufacturers in the United States who may desire to take part in this competitive trial must present to the legation of Chili in Washington, or to the Consul-General of Chili in New York, applications for admission accompanied by a plan of the mill or a drawing of the apparatus, with a statement of the motive power required, the width and diameter of the pulley which gives movement to the mill or apparatus, and the number of revolutions it requires when in operation. These applications will be acted upon before the first of February, 1890, in the legation of Chili in Washington.

11. All material required for the plants will be for account of the manufacturers, the association paying, as before stated, the cost of freight and erection. Independent apparatus, not requiring a special plant, will be set up by the

association in conformity with the explanations mentioned in Rule 9. 11. (a) Manufacturers of mills or milling apparatus, whose application for admission shall not have been accepted, may, if they so desire, take part in the competitive trials without having the right to the concessions of the programme in reference to freights, erection or cash premiums.

12. The mills and apparatus which have been accepted for the purpose of entering into the competition must be in Valparaiso, at the latest, on first day July, 1890.

13. Manufacturers who shall not re-export their apparatus within the term of one year, counting from their arrival at the port of Valparaiso, must refund to the association the amount of the freight paid and must likewise pay the corresponding custom house duties thereon.

14. The circumstances which the jury will take into consideration, in awarding the prize of the competitive trials, will be the quality and quantity of the yield and the cost of production.

15. The prize of 20,000 francs will be awarded to the mill which combines in the highest degree the said requirements; and should there be no one possessing them all, two prizes will be awarded; one of 14,000 francs and another of 6,000, to the two mills which, in the opinion of the jury, shall be the best ones presented for competition within said conditions. The premiums will, in any case, be awarded.

16. Premiums of honorary mention will be granted, consisting of diplomas or medals, to the manufacturers of such mills or apparatus as the jury may consider worthy of this distinction.

KINGKIANG, a China district, still belongs to the primitive world. Wheat is first threshed with flails made of bamboo, and then pounded by a rough stone hammer, working in a mortar which rests on a pivot, and operated like a treadle by the human foot. This separates the husk, and it is then winnowed from the grain, which is afterwards ground by millstones driven by men or bullocks.

#### A NEW METHOD OF TREATING DISEASE.

##### HOSPITAL REMEDIES.

What are they? There is a new departure in the treatment of disease. It consists in the collection of the specifics used by noted specialists of Europe and America, and bringing them within the reach of all. For instance the treatment pursued by special physicians who treat indigestion, stomach and liver troubles only, was obtained and prepared. The treatment of other physicians, celebrated for curing catarrh was procured, and so on till these incomparable cures now include disease of the lungs, kidneys, female weakness, rheumatism and nervous debility.

This new method of "one remedy for one disease" must appeal to the common sense of all sufferers, many of whom have experienced the ill effects, and thoroughly realize the absurdity of the claims of Patent Medicines which are guaranteed to cure every ill out of a single bottle, and the use of which, as statistics prove, has ruined more stomachs than alcohol. A circular describing these new remedies is sent free on receipt of stamp to pay postage by Hospital Remedy Company, Toronto, Canada, sole proprietors.

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## GENERAL NOTES.

THE exports from and the imports into the United States, of iron, leather and wood, during the first 10 months of 1886, were as follows:

|               | Iron.        | Leather     | Wood.        |
|---------------|--------------|-------------|--------------|
| Imports ..... | \$17,286,000 | \$9,642,000 | \$10,193,000 |
| Exports ..... | 19,015,000   | 9,990,000   | 24,387,000   |

### STRIKES COSTLY AND USELESS.

A. B. SALOM.

Laborers in the United States are beginning to learn that agitation, which assumes the form of strikes, with all concomitant disorders, is agitation that really retards and weakens the cause of labor. Quacks of the "Reverend" Hugh O. Pentecost stripe may denounce law and order, capital and society, to audiences of laboring men, and declare to them that their only instrument of offensive and defensive warfare with capital and society is the strike, but sane men have only to look at the cold facts in the situation to enable them to rate the froth of the blatant anarchistic demagogues of that stripe at its true worth. The history of the strikes in the State of New York for several years past will illustrate the subject vividly. According to the record of the Commissioner of the Bureau of Statistics of Labor in this State, the strike and boycott movement has been as follows:

|                            |             |                             |             |
|----------------------------|-------------|-----------------------------|-------------|
| Number of strikes, 1888..  | 1,021       | Cost to labor org'ons, '88. | \$135,357   |
| Number of strikes, 1887..  | 1,604       | Cost to labor org'ons, '87. | \$217,069   |
| Number of strikes, 1886..  | 2,601       | Cost to labor org'ons, '86. | \$329,080   |
| Successful strikes, 1888.. | 489         | Loss to employers, 1888..   | \$464,230   |
| Unsuccessful strikes.....  | 408         | Loss to employers, 1887..   | \$1,102,576 |
| Compromised .....          | 93          | Loss to employers, 1886..   | \$1,644,812 |
| No. persons engaged, '88.  | 24,054      | Number boycotts, 1888..     | 266         |
| No. persons engaged, '87.  | 51,731      | Successful.....             | 53          |
| No. persons engaged, '86.  | 127,392     | Unsuccessful.....           | 79          |
| No. refused w'k after '88. | 2,270       | Pending .....               | 134         |
| No. refused w'k after '87. | 8,176       | Number boycotts, 1887..     | 350         |
| Gain wages by strikes '88. | \$359,551   | Successful.....             | 101         |
| Gain wages by strikes '87. | \$944,932   | Unsuccessful.....           | 36          |
| Gain wages by strikes '86. | \$1,420,885 | Pending.....                | 113         |
| Wages lost, 1888.....      | \$1,083,653 |                             |             |
| Wages lost, 1887.....      | \$2,013,229 |                             |             |
| Wages lost, 1886.....      | \$2,552,554 |                             |             |

Laboring men can not afford to be ignorant of these records. They can not afford to lose sight of the fact that the so-called "gains," in most cases of strikes ended favorably to the strikers, are only seeming gains, while the direct loss in dollars and cents is great, positive and irrecoverable. Even had every strike succeeded, it would take many years for the "gain" secured to equal the aggregate losses incurred in the strikes. The laboring man who goes out on strike, and stays out a year, to gain an increase of 20 cents a day in wages, must include in his calculation the time his "gain," in case he succeeds, will require to make up for the loss of his wages for the year. Suppose he is a skilled laborer, in iron and steel, earning \$3.60 a day. His wages during the 313 working days of the year would be \$1,126.80. He quits work for a year to force his employer to pay him \$3.80 a day. In case he secures the increase of 20 cents a day, it will take him 5,634 working days, or 15 years, 5 months and 9 days, to make up for the loss of his salary for the year of the strike.

Every aspect of the situation is against the striker. If he has in bank enough money to carry him through the year of idleness without actual suffering, he may feel somewhat capable of standing out confidently. When he goes to work again, his hoard has disappeared, the savings of years are

gone, and he must commence again at the bottom. If his savings were all invested in a home, the end of the strike finds him compelled to leave the home, or to occupy it under a troublesome mortgage. If he had no money at all when the strike began, he would be plunged at once into all the miseries of want in every way. Shelter, clothing, food and other necessities would be lacking, and the year of idleness and want would reduce him and his family to the deepest depths of degradation. The resumption of work would find him weak in body, desperate in mind and reckless of the future, and the increase in wages, gained at so heavy an expense, would not in a million years make up for him a balance for the long year of misery.

These inconveniences are inevitable, even where the strikers succeed. The other side of the picture, involving the final failure of the strikers, is a most unpleasant one to contemplate. In the event of losing that for which they strike, everything is lost, time, earnings, savings, comforts and conveniences. Such a loss is without hope of retrieving. The striker has staked everything on the battle, and the end finds him the loser of all. The successful striker, who is generally one out of three, or four, or five, may have a chance to retrieve in years the loss of the one year of strikes, but the unsuccessful strikers, generally two out of three, three out of four, or four out of five of those engaged in the conflict, degenerate into the hopeless, helpless wrecks seen everywhere in and about industrial centers. Thousands of these men are the victims of the strike. They were once listeners to the harangues of the glib orators who agitate for a living at high wages. They once aided in naming and empowering the picturesque "walking delegates," who "ordered" them out of work and drove them into striking, idleness, trampdom, mendicancy and general ruin.

Theoretically, of course, much may be said in support of the strike argument, but in practical application everything is against that argument. The careful study of the practical phase of the subject has convinced the chiefs of several prominent and powerful labor organizations that the strike is out of the question as a weapon for labor to employ. They have gone through it all again and again. They have reckoned the cost of the three, or four, or five losses set over against the one occasional gain. They have converted into dollars and cents the miseries, the wastages, the disorders, the criminalities, the losses of public sympathy and support that have come out of the strikes of the past fifteen years, and they have been forced to acknowledge that the balance is largely against the system of striking. One man, who as the leader of a gigantic railroad strike terrorized several states, jeopardized hundreds of millions of dollars, put the general public to incalculable inconvenience and instituted a virtual reign of terror in extensive communities, is now trying to manage a street peanut stand in the city that once was terrorized by him and his fellow-strikers. His fall is an example of the great failures that constitute an inevitable part of the strike system.

Labor has lost by strikes. It has also gained somewhat by strikes. It has gained mainly through its losses, paradoxical as the statement may seem at a glance. Because it has lost through the employment of inappropriate and ineffective weapons, it has gained wisdom enough to enable it to understand its error and to induce it to throw aside those weapons. That is a great gain. While it may never enable labor to make up what it has lost in the past in dollars and cents, it is still a gain, because it will prevent labor from inviting further losses in the absurd and costly use of ineffective strikes. The gain is positive, because it opens the way for better methods in the future, and because it will lead labor to appreciate more perfectly its own relative importance in the field of industry and production, of progress and civilization.

### COTEMPORARY COMMENT.

Despite the fact that the grain-tester, which has been adopted by a great many grain-dealers and millers of Ontario, has been strongly opposed, it is continually gaining friends, and more are used in that province now than ever before. The farmers, who hauled dirt to market with their



wheat and sold it at the same price they did their wheat, are especially opposed to the tester being used. They have concocted different schemes to make the public lose confidence in the testers, but have failed ignominiously.—*Chicago "American Miller."*

To buy and sell for cash is the safe mode of mercantile

management. This system relieves the mind of much worry and anxiety, enables the active prosecution to become a pleasure, and the man so engaged to be independent. This should be the aim of every merchant, manufacturer and business man.—*Toronto, Canada, "Merchant & Manufacturer & Millers' Gazette."*

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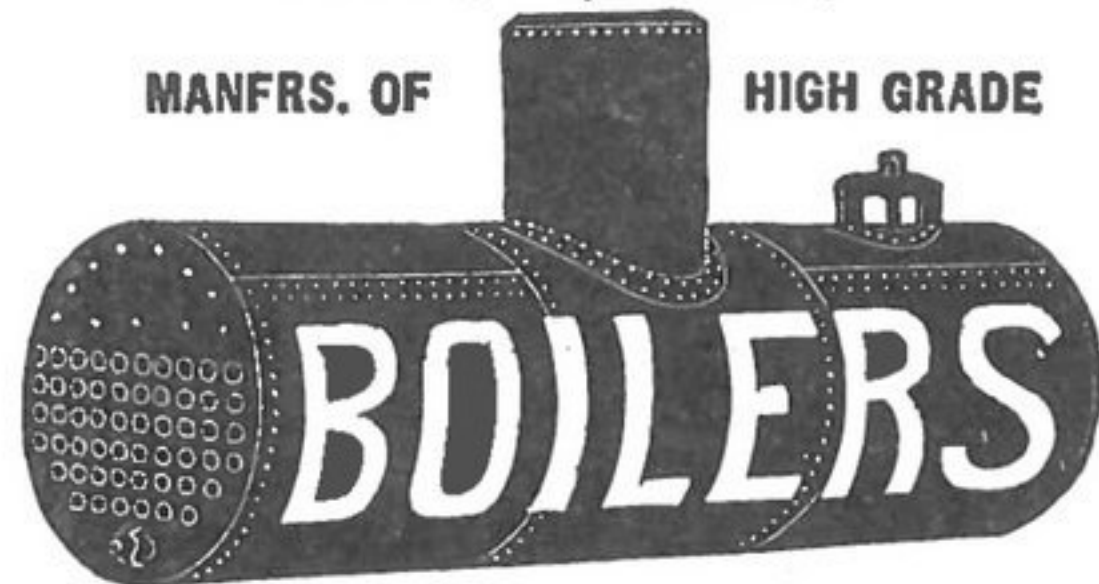
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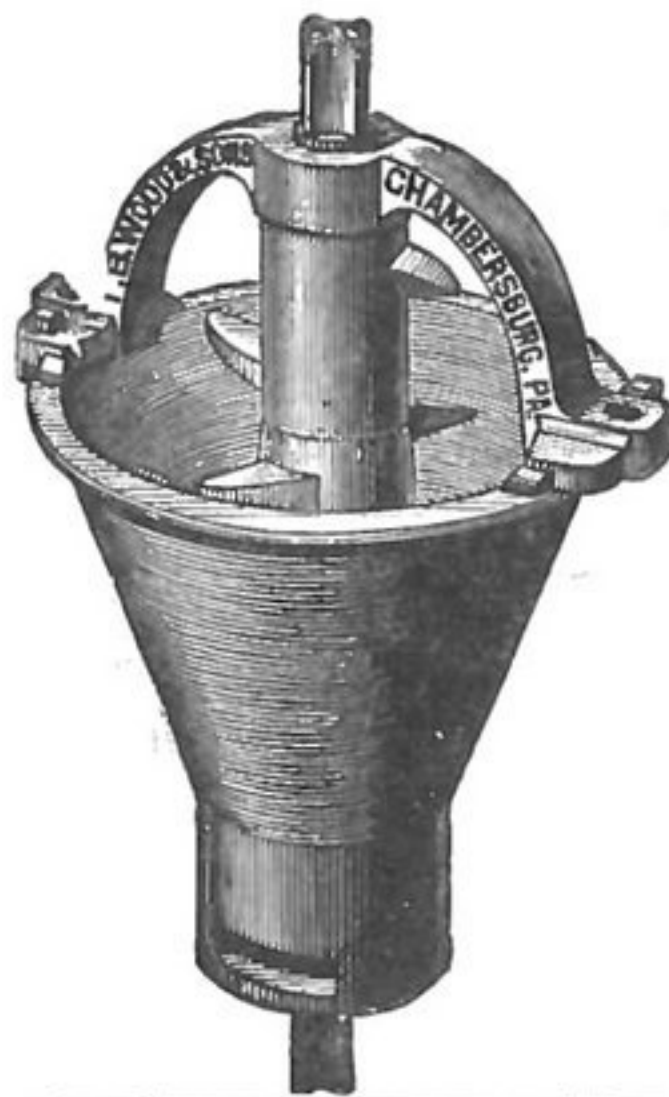
All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 30 days' trial when satisfactory reference is furnished.

Please Send for Circulars.

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**\$15**

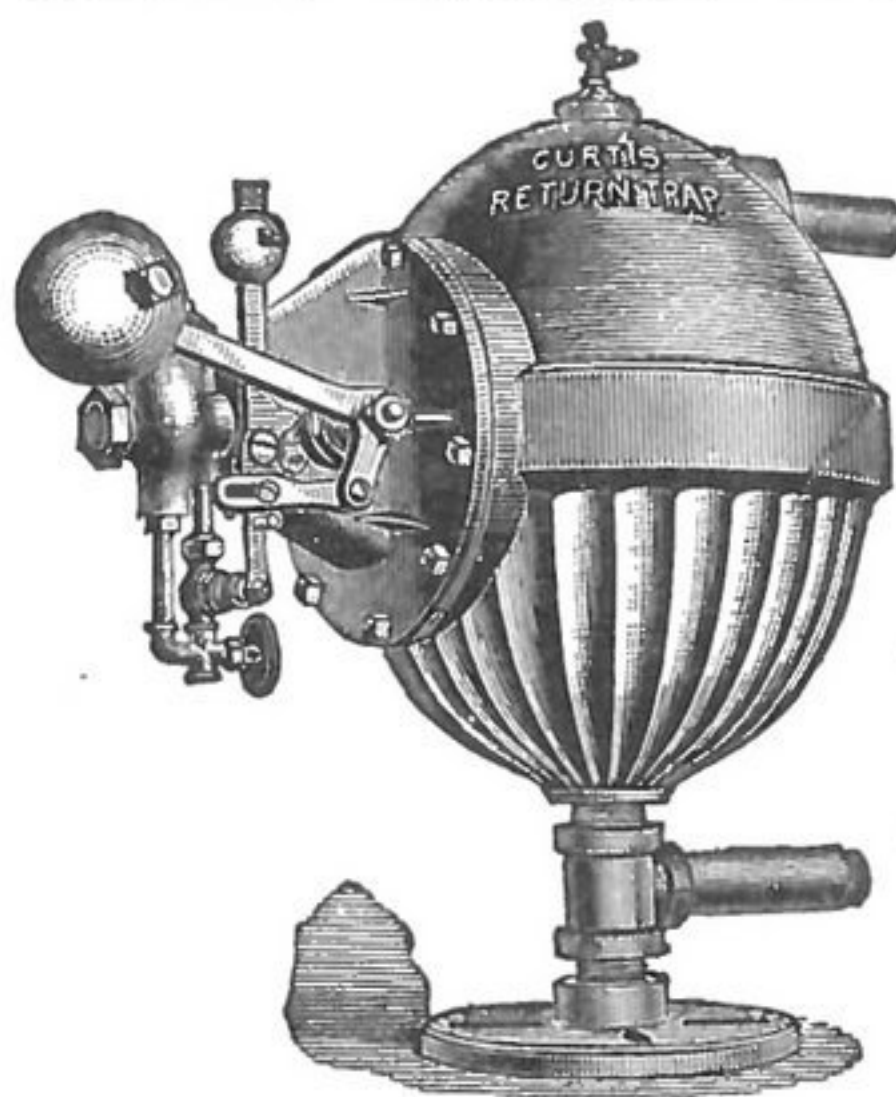
WILL BUY THE BEST AND CHEAPEST  
CORN & COB CRUSHER  
IN THE WORLD.



Our crushers are made of a "special quality" of material that insures years of service. Thousands of these crushers are in use throughout the United States and Canada. Send for circular, giving testimonials from millers who are using them, and know a good thing when they see it.

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Shafting, Pulleys, Hangers, Mill Gearing, Etc.



**THE CURTIS**  
PATENT RETURN STEAM TRAP.

It is noiseless, positive, rapid, will return all condensation back into the boiler, and works equally well in connection with reduced pressure or exhaust steam, also when the return is below the water line of the boiler.

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No. 74 BEVERLY ST., BOSTON, MASS.

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## The Canton Cabinet Filing Case Company, Canton, Ohio.

MANUFACTURERS OF

The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture

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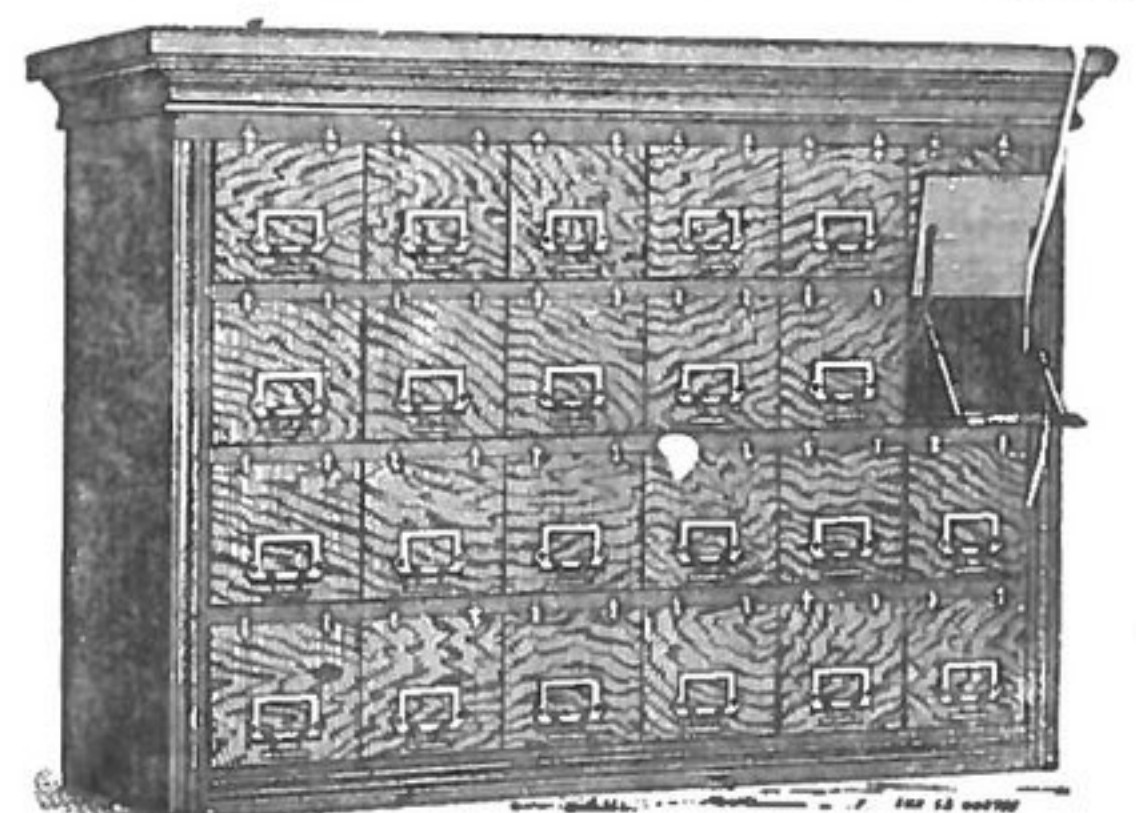
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NO. 8.



NO. 1.



# NOTES & NEWS

Mr. Sides, Salem, N. C., remodels to rolls.  
 A. J. Holmes, Pine, Va., builds a grist-mill.  
 H. Herrell's grist-mill, Quincy, Miss., burned.  
 Mr. Long, Hill City, Tenn., builds a grist-mill.  
 L. Shaw's grist-mill, St. Paul's, N. C., burned.  
 E. E. Cadle, Waynesboro, Ga., built a grist-mill.  
 A. Helms, miller, New Palestine, Ind., assigned.  
 J. E. Hooper, Colorado, Tex., builds a grist-mill.  
 G. B. McDonald, Jefferson, Tex., built a flour-mill.  
 W. J. Davis, Federalsburgh, Md., builds a grist-mill.  
 W. B. Cockman, Sutton, W. Va., builds a roller mill.  
 W. L. Shideler, Rockwood, Tenn., builds a flour-mill.  
 J. W. Graves, Leonardtown, Md., builds a grist-mill.  
 S. P. Jones, Cartersville, Ga., improved his flour-mill.  
 W. W. Stallings' grist-mill, Hawthorne, S. C., burned.  
 The Mier elevator, Pocahontas, Ill., burned; loss \$9,000.  
 C. C. Vanarsdall, Hustonville, Ky., improves flour-mill.  
 Beaty & Martin, Kyle, Tex., want grist-mill machinery.  
 Galt & Co., Washington, D. C., enlarge their flour-mill.  
 G. McFadgen, Lemon Springs, N. C., builds a flour-mill.  
 J. W. Griffith, Greensboro, N. C., wants flour-mill machinery.  
 Armstrong, Shaw & McCulley, millers, Rochester, N. Y., dissolved.  
 B. K. Turner and others, Corydon, Ky., project a roller-flouring-mill.  
 E. H. Nilson's grist-mill, near Rock Cave, W. Va., burned; loss \$5,000.  
 Steiner Bros., Jefferson, Md., want machinery for their flouring-mill.  
 The Eureka Mill Co., Chattanooga, Tenn., started a corn and feed mill.  
 J. B. Ashton, Columbia, Tenn., is building a 40-barrel corn-meal mill.  
 R. O. & O. K. Gleaves, Hermitage, Tenn., have refitted their flour-mill.  
 Mr. Smith, Concord, Ky., will repair and operate the Merchant Flour Mill.  
 The Star Milling Co., McMinnville, Ore., is a newly incorporated concern.  
 J. H. Randolph & Son, Newport, Tenn., propose to build a new flouring-mill soon.  
 D. L. Lewis, Talladega, Ala., has organized a stock company to build a flour-mill.  
 The Fort Smith Flour Mill, Fort Smith, Ark., enlarges capacity to 250 barrels a day.  
 H. T. Rogers, Mt. Sterling, Ky., has bought the Campbellsburg, Ky., flouring-mill.  
 Watson & Gunter, Jonesborough, N. C., want machinery for a new flouring-mill.  
 J. M. Humphrey's grist-mill, Cherubusco, N. Y., burned; loss \$5,000; no insurance.  
 The Wheelers, Gallatin, Tenn., propose to build a flouring-mill and a grain-elevator.  
 The Mansfield Milling Co., Mansfield, Tex., enlarge flour-mill; machinery is wanted.  
 Maryville, Ky., men propose to buy the Kennedy water-power and build a flour-mill.  
 The Adairville, Ky., Milling Co. are building a 75-barrel flour-mill and a grain-elevator.  
 A. Mansfield, Dunlap, Tenn., wants machinery for a 100-barrel roller flour and grist mill.  
 Mr. Jernigan and others, White House, Tenn., are organizing a flour-mill stock company.  
 T. M. Holt, Graham, N. C., rebuilds his grist-mill and adds a roller-process flouring-mill.  
 J. M. Veach & Co., Adairville, Ga., put two new 50-horse-power boilers in their flouring-mill.

E. L. & D. W. Beal, millers, Palisades, S. D., dissolved, D. W. Beal continuing the business.

C. G. Clarke, Eighty Eight, Ky., wants a roller outfit for his flouring-mill on the short system.

Campbell & Williamson, Carmichael, S. C., are rebuilding their recently burned grist-mill.

J. W. Brown & Co., Federalsburgh, Md., want machinery for a 25-barrel water-power flouring-mill.

E. L. Haughton, Pittsboro, N. C., wants an outfit of machinery for a new grist and flouring-mill.

Jos. Williams's roller flour-mill, Glen Williams, Ont., Canada, burned; loss \$8,000; insurance \$5,000.

J. W. Reeves, Dallas, Ga., will rebuild his burned flour and grist-mill. He wants machinery for an outfit.

The Leeper Flour Mill, Unitia, Tenn., has been sold to a stock company, who will remodel the plant to rolls.

Taylor Bros. & Hall, grist and flouring mill, Athens, Ga., will move to Macon, Ga., where they will add a grain-elevator.

Geo. F. Thompson's flour-mill, Warsaw, Ky., burned; he will rebuild and add a corn-mill; a full outfit of machinery is wanted.

A. D. Sprague's roller flouring-mill, near Caledonia, Minn., burned; loss \$10,000; no insurance; fire originated in the dust-room.

C. C. Conner and others, Fayetteville, Ark., have incorporated the Fayetteville Mercantile Co., capital \$23,000, to build a grist-mill.

B. B. Comer, of Anniston, Ala., has bought the Wharton Flour-Mill at Birmingham, Ala., and will spend \$75,000 in improving the plant.

F. J. Sledge and others, Kyle, Tex., incorporated the Kyle Ginning & Milling Co., capital stock \$20,000; they want flour-mill machinery.

M. Humes and others, Huntsville, Ala., organized the Huntsville Fertilizer & Milling Co., capital stock \$25,000, to build a grist-mill.

The report comes from Minneapolis that C. A. Pillsbury, representing the English milling syndicate of Minneapolis, is trying to lease the three C. C. Washburn mills, which are controlled by the Fidelity Trust Company of Philadelphia. If these mills are secured the syndicate would control a daily capacity of 25,800 barrels.

The National Pulley Covering Co., of Baltimore, Md., have recently received their third order for their "Patent Friction Covering" for pulleys from the Eagle Pencil Co., of New York, and the fourth from Frank Hitch, Hamilton, N. C. This company has just appointed Chas. A. Turner, 18 Market street, Pittsburgh, Pa., agent for Pittsburgh and Allegheny. Their January business came from eighteen widely separated states.

## BOOKS AND PAMPHLETS.

MR. STANLEY'S PERSONAL NARRATIVE.—The interesting fact is announced by Messrs. Charles Scribner's Sons that they have acquired from Mr. Henry M. Stanley all the American rights for his personal narrative of the expedition for the relief of Emin Pasha. Prior to the appearance of the complete work, *Scribner's Magazine* will publish an article upon his last journey by Mr. Stanley. It will be illustrated and is certain to be as important a contribution as any that has ever appeared in an American magazine. Readers may have noticed that Mr. Herbert Ward, who was one of Stanley's officers, makes no mention of the expedition in the article recounting his experience upon the Congo, which appears in *Scribner's* for February, the fact being that Mr. Stanley has reserved the sole right to describe this most remarkable of all his African undertakings.

Marion Harland, the friend and helper of women everywhere, has taken up the work of restoring the ruined monument marking the burial-place of Mary the Mother of Washington. She says truly, in her appeal to the mothers and daughters of America to erect a fitting monument to her who gave Our Country a Father, that "the sun shines upon no sadder ruin in the length and breadth of our land than this unfinished structure." The publishers of *The Home-Maker*, of which Marion Harland is the editor, offer, as their contribution to the good cause, 75 cents out of every annual subscription of \$2 to the Magazine sent in during the next six months. Every such subscription must be accompanied by the words, "For Mary Washington Monument." The offer is generous and should meet with an enthusiastic response. Address Marion Harland, 10 West 22d st., New York, N. Y.



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## MANUFACTURER OF

# FLOUR SACKS.

## 178 Duane Street,

## New York



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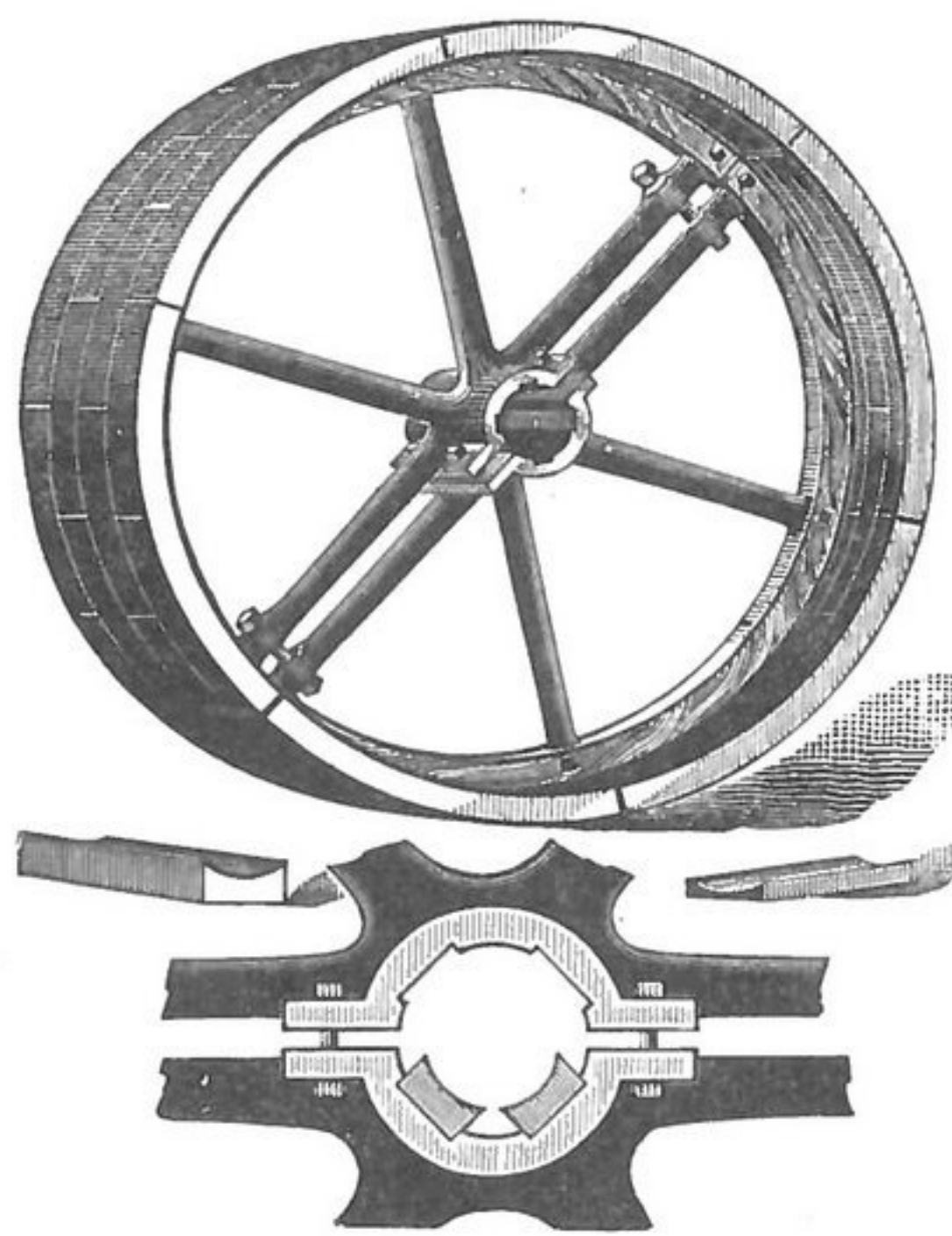
MILLERS' FLOUR SACKS A SPECIALTY.

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**THE DONWELL CO.**



**BIRD & CRANE MFG. CO., KALAMAZOO MICH.**

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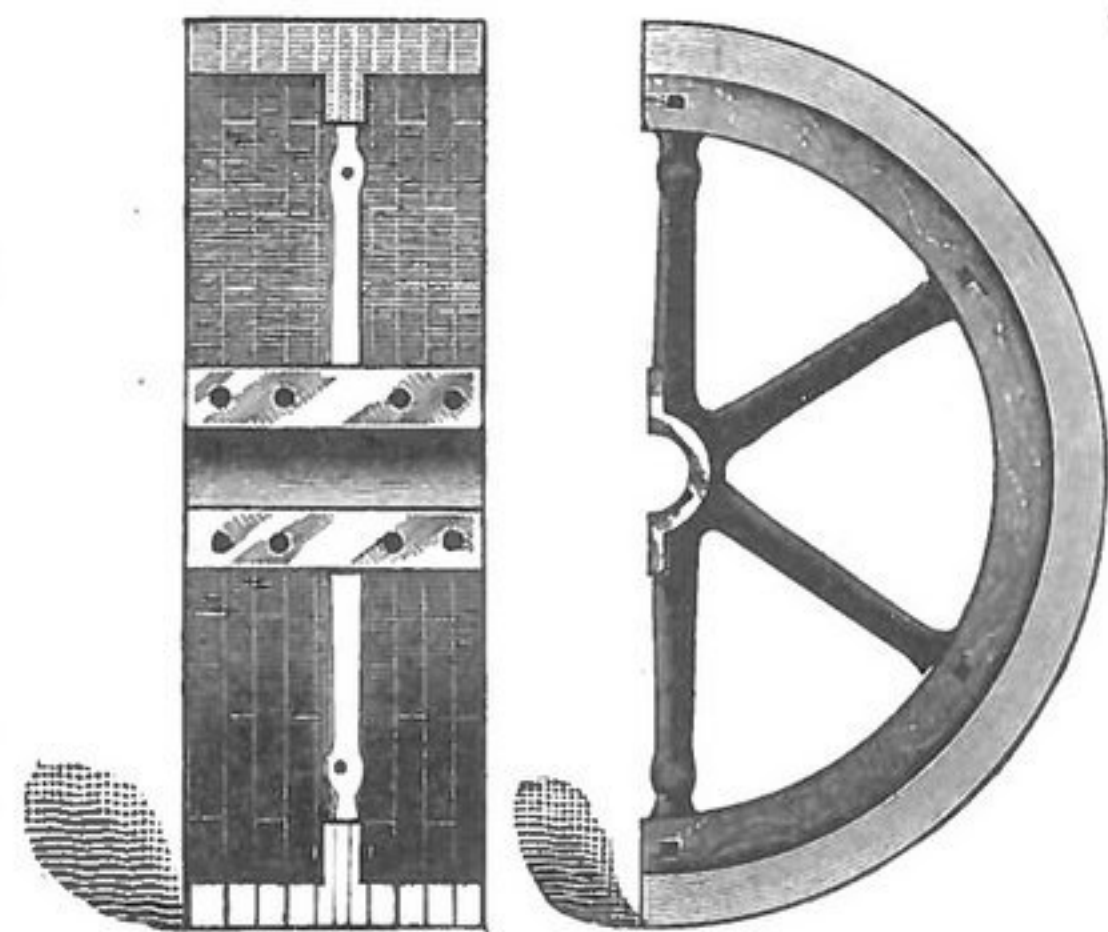
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WOOD RIM WITH IRON ARMS.

**The Best Pulley on Earth!**

Is very easily and quickly adjusted to Shaft. Has Patent Iron Bushings Interchangeable, to Fit Different Diameters of Shafts. Has FOUR or SIX Bearings on Shaft. This fastening never slips. Every Pulley strongly built and perfectly balanced.

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For CORN and FEED GRINDING

Genuine French

**BUHR STONES**

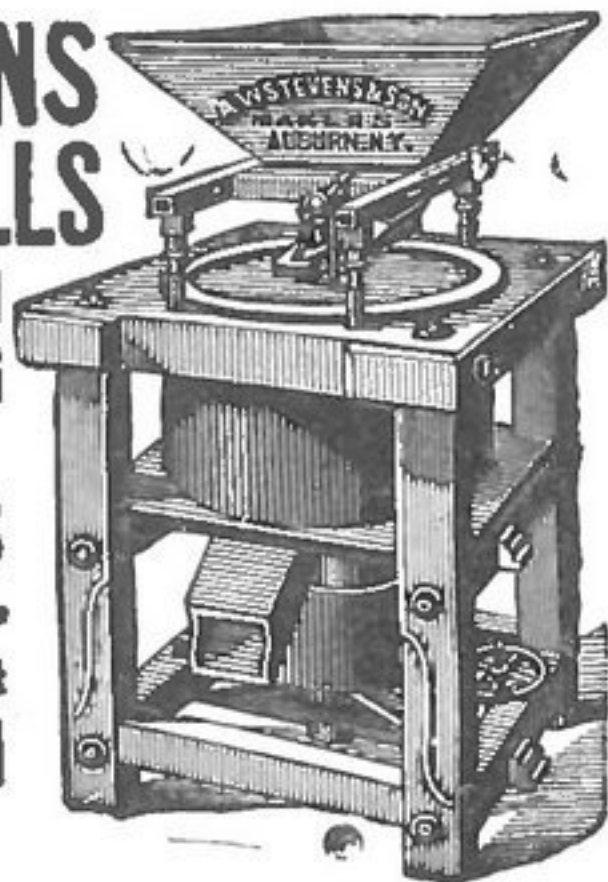
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Prices Below the Lowest

**A.W. STEVENS & SON**

AUBURN, N. Y.

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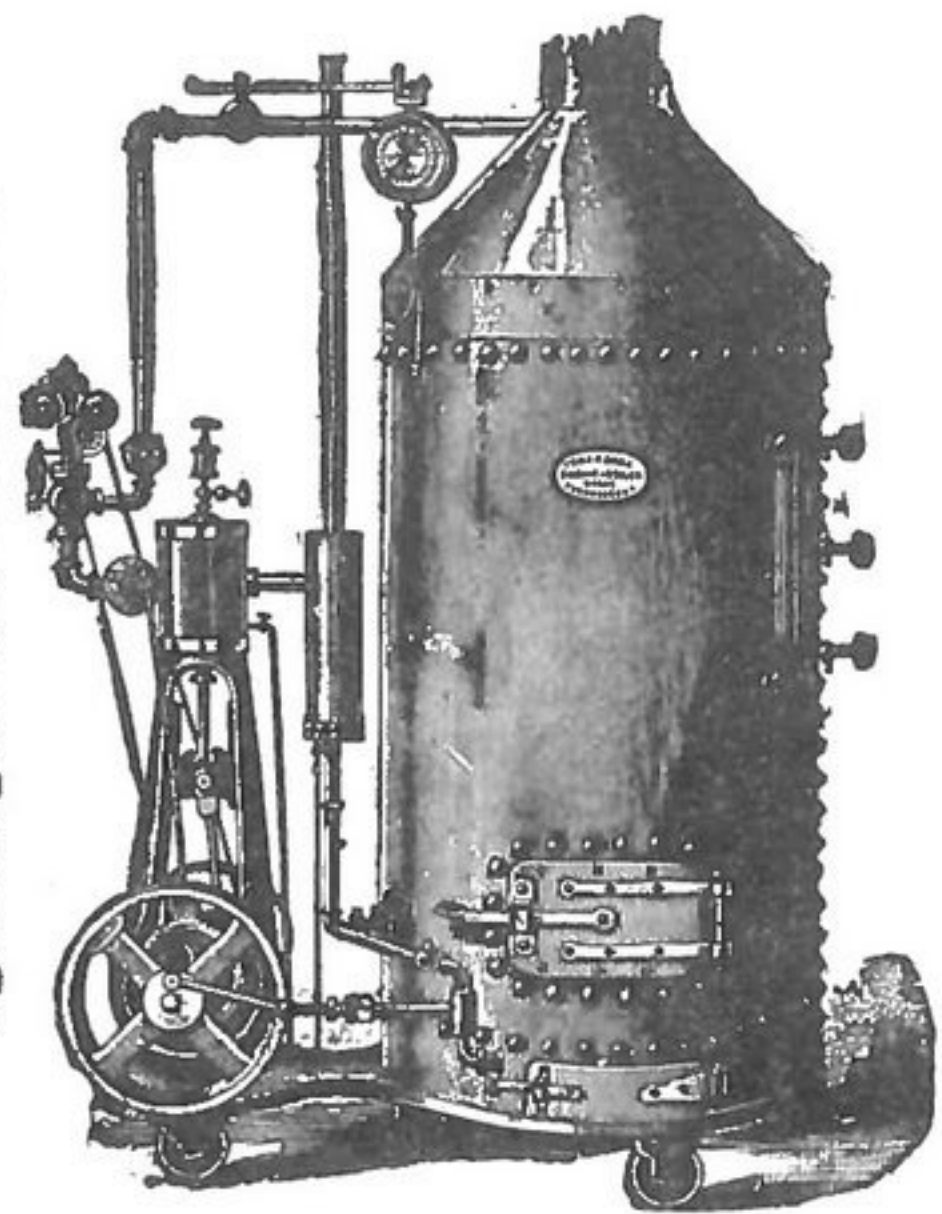


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**TONAWANDA ENGINE AND BOILER WORKS**

A Large Assortment of Machinery.

The Best 6-Horse Power Semi-Portable Upright Engine and Boiler Made.



SPECIAL PRICE. GUARANTEED.

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**ARMITAGE, HERSCHELL & CO.**

Tonawanda N. Y.

**The Cincinnati Corrugating Co.**



**VICK'S 1890'S**

**FLORAL GUIDE.**

The Pioneer Seed Catalogue of America, contains complete list of Vegetables, Flowers, Bulbs, Potatoes and Small Fruits, with descriptions and prices. Department of Specialties and all Worthy Novelties. Same shape and style as proved so satisfactory last year. Many new and elegant illustrations, handsome colored plate 8x10 1/2 inches, and frontispiece. Special Cash Prizes \$1000.00; see Floral Guide. Every person who owns a foot of land or cultivates a plant should have a copy. Mailed on receipt of 10 cents, which amount may be deducted from first order. Abridged Catalogue Free. Pure Stocks. Full Measure. Prices Low for Honest Goods.

**JAMES VICK, SEEDSMAN, Rochester, N. Y.**

**THE "HARLOW" Positive Feed Lubricators.**

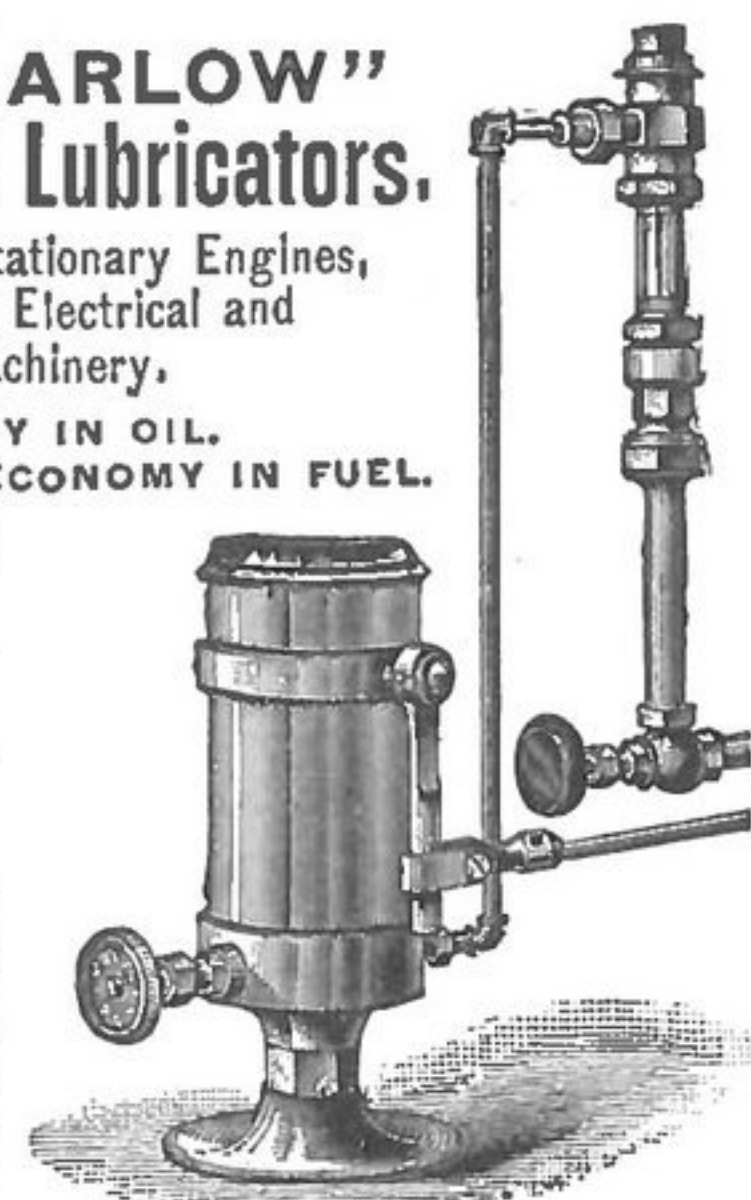
For Marine and Stationary Engines, Steam Pumps, Electrical and other Machinery.

MAXIMUM ECONOMY IN OIL. MARKED ECONOMY IN FUEL.

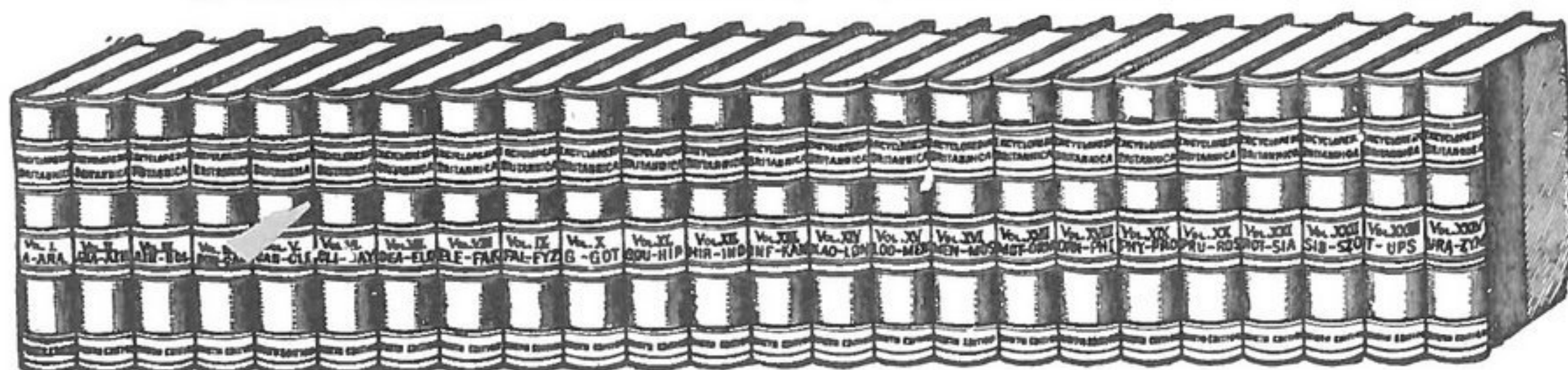
Not dependent upon or operated by Steam Pressure, Condensation or Gravity. Not affected by changes of temperature.

BEING operated by some moving portion of the engine or machine to be lubricated, the "Harlow Lubricator" starts and stops with the engine or machine being lubricated, without requiring the slightest attention from the engineer or operator, always delivering the oil in any amount from a drop to a constant stream. The cup can be filled at any moment while the engine or machine being lubricated is in operation, without causing any leakage either of oil or steam.

**Harlow Lubricator Mfg. Co. BOSTON, Mass. U. S. A.**



A LITERARY MARVEL, — \$2.50 PER VOLUME,



We publish the Popular Reprint of the **ENCYCLOPEDIA BRITANNICA** from latest English edition, at \$2.50 per volume, being one-third the price of the original and one-half the price of the Scribner edition of the same work. We have reproduced all illustrations, maps and texts, page for page and volume for volume. Complete sets of 24 vols. now ready for delivery on EASY PAYMENTS. The greatest work of the kind in the English language. A subscriber writes: "The best is now the cheapest." All high priced editions of this work are in our office for comparison. Circulars and sample pages mailed. Agents wanted,

**THE HENRY G. ALLEN COMPANY,**

739 & 741 Broadway, New York; & 126 Washington St., Chicago.



## EUROPEAN ECHOES.

A RUSSIAN writer asserts that through the careless sacking of grain, and the use of hooks upon the sacks while loading and unloading into and from cars and boats, an average of 2 per cent of all grain transported is lost, entailing an annual loss of \$5,000,000; and he estimates the yearly cost of bags at half that amount.

THE exports of wheat from the Argentine Republic in the first nine months of 1889 were 15,455 tons, compared with 172,353 tons in the corresponding period of 1888. The progress of agriculture in the Argentine Republic is illustrated by the fact that 31,339 ploughs were imported in nine months of 1889, compared with 26,750 in the whole of 1888, and 17,585 in the whole of 1887. 1,772 reaping machines were imported from January 1st, 1889 to September 30th, 1889, against 2,048 in 1888, and 1,434 in 1887.

GREAT BRITAIN has imported during the first four months of the crop year 1889-90 a total of 4,814,319 quarters of wheat grain and 1,920,768 quarters of flour as wheat, in all 6,735,087 quarters, indicating a total importation, during this crop year, of 20,105,261 quarters. This estimate is made by the Liverpool "Corn Trade News." The importations in past years have not varied greatly, as the following table shows:

|                           | Wheat.     | Flour as<br>Wheat. | Total<br>Wheat and<br>Flour. |
|---------------------------|------------|--------------------|------------------------------|
| Net Imports 1888-9 .....  | 14,097,995 | 4,656,049          | 18,754,044                   |
| Net Imports 1887-8 .....  | 11,821,744 | 5,837,792          | 17,659,536                   |
| Net Imports 1886-7 .....  | 12,721,991 | 5,356,532          | 18,078,523                   |
| Net Imports 1885-6 .....  | 11,391,288 | 4,370,146          | 15,761,434                   |
| Net Imports 1884-5 .....  | 13,410,258 | 5,290,619          | 18,700,877                   |
| Net Imports 1883-4 .....  | 11,657,139 | 4,777,035          | 16,434,174                   |
| Net Imports 1882-3 .....  | 15,554,145 | 5,230,552          | 20,684,697                   |
| Net Imports 1881-2 .....  | 14,075,452 | 3,545,403          | 17,620,855                   |
| Net Imports 1880-1 .....  | 12,766,718 | 3,901,729          | 16,668,447                   |
| Net Imports 1879-80 ..... | 13,485,625 | 3,265,101          | 16,750,726                   |
| Net Imports 1878-9 .....  | 12,033,323 | 2,939,034          | 14,972,357                   |
| Net Imports 1877-8 .....  | 12,116,591 | 2,309,557          | 14,426,148                   |
| Net Imports 1876-7 .....  | 10,087,155 | 1,897,792          | 11,984,947                   |
| Net Imports 1875-6 .....  | 12,182,481 | 1,732,335          | 13,914,816                   |

A RECENT Russian agricultural report says: "The Americans have succeeded in securing for their corn trade an admirable organization, which assures to American wheat (thanks to the care with which it is prepared for the market) a marked superiority over Russian wheat, although this latter is intrinsically the better of the two. The preference which is shown to the American product leads the English merchants to give higher prices for American than for Russian wheat. In 1888 the average price for a quarter of American and Indian wheat in London was 35s. while the Russian wheat fetched only from 31s. 10d. to 33s. 6d. It is worth noticing that at the same period wheat imported from Dantzic was quoted at an average of 36s. 1d. Now, as this port principally exports Russian cereals, it is enough for our grain to be manipulated by German exporters to obtain in London prices higher than those of American cereals." The assumption that Russian wheat is intrinsically superior to American wheat is one that is not borne out by facts and comparisons.

INDIA exported to Europe during 1889 a total of 3,330,000 quarters of wheat, against 3,833,000 quarters in 1888, against 3,509,000 quarters in 1887, and against 5,349,000 quarters in 1886. Great Britain took 2,301,000 quarters of the total in 1889, against 2,267,000 quarters in 1888, against 1,778,000 quarters in 1887, and against 2,816,000 quarters in 1886. Commenting on the decrease in Indian wheat exports, on the decreased favor of Continental Europe to Indian wheat shown in a consumption falling from 49 to 31 per cent. of the total amount sent to Europe, on the decadence of Bombay as an exporting point, and on the almost total cessation of exports from Calcutta, the Liverpool "Corn Trade News" says: "What now will those prophets say who forecast the near approach of the time when India would supply Europe with all she wanted in the way of wheat and have plenty to

spare for the Yankee when he should commence importing? This season India's share of the total export trade of the world has amounted to 9 per cent., while in her best year she never got higher than 14 per cent."

### THIS IS BEYOND OUR CONTROL! THE EVOLUTION OF EXPORT FLOUR.

"American flour is no longer a name to conjure with in the London and other English markets."—*English Paper*.

#### SCENE IN A YANKEE MILL.

Here! You lazy Cub! You, sleepy Bill!  
Get your broom and help me clean this mill!  
First we'll send this white flour to the store,  
And make more room on this 'ere floor.  
There! All the fine flour's sent away,  
Now take your broom and make it play!  
Sweep all the dust from every nook,  
From every beam and every hook,  
From every window sash and ledge,  
From every dusty top and edge.  
Dust all the purifiers well,  
And sweep as long as dust you smell!  
Brush down those cobwebs in the heap,  
Dust out the cracks so dark and deep;  
Shake those old coats, and that old hat,  
And dust the fur of that black cat;  
Scrape all the dust in one grand mound  
That in these walls can now be found!  
Throw in some bran—the coarsest grade—  
Sift in some ashes—that white shade—  
Hunt all the red-dog, all the fluff,  
Hunt all the stive and awns and stuff,  
Bring all the crease-dirt, rank and black,  
And pour it on the growing stack.  
A little sawdust and some sand  
Will give the mess a "body" grand!  
There! Run the heap into the pack  
And slide it in that export sack!  
But hold! Again we'll run it through,  
And gluten add in powdered glue!  
'Tis done, brave Cub! 'Tis done up brown!  
We'll ship that stuff to London town,  
Where bakers skilled will find it meet  
To "strengthen up weak Indian wheat!"  
Where critics wise will scan with care  
And call it flour of value rare!  
Then carpers will condemn, because  
"The Yankee flour's not what it was!"  
But that will not affect our biz,  
Unless they find just what it is!  
And now, my Cub, we'll grind some "straight"  
For those home growers, Jones & Tate!  
And make it pure and speckless white,  
So that it bakes up sweet and light,  
Because, you know, our dinged home trade  
Must always have the best that's made!  
And keep the dust, red-dog and fluff—  
The British market eats that stuff!  
And when the dust-heap grows amain,  
You may grind that weeviled grain.  
It will give you practice grand—  
I'll trust the whole batch in your hand,  
And if the flour's too bad for feed,  
We'll send it o'er the sea with speed!

"Our British flour-makers have become so skillful in handling their new tool, the roll, that they are now able to hold their own with their American competitors, and sometimes a little more."—*English Paper*.  
Duluth, Minnesota, February, 1890. Bang.

#### CATARRH.

##### CATARRHAL DEAFNESS—HAY FEVER. A NEW HOME TREATMENT.

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King street, Toronto, Canada.—*Christian Advocate*.

Sufferers from Catarrhal troubles should carefully read the above.



**COMPOUND** Condensing or Non-Condensing.  
16 SIZES, 5 to 500 H. P.  
Not yet equaled by any form of Engine for  
**HIGH FUEL DUTY AND SIMPLICITY.**

**STANDARD** 13 Sizes in Stock.  
5 to 250 H. P.  
3000 in use in all parts of the Civilized World.

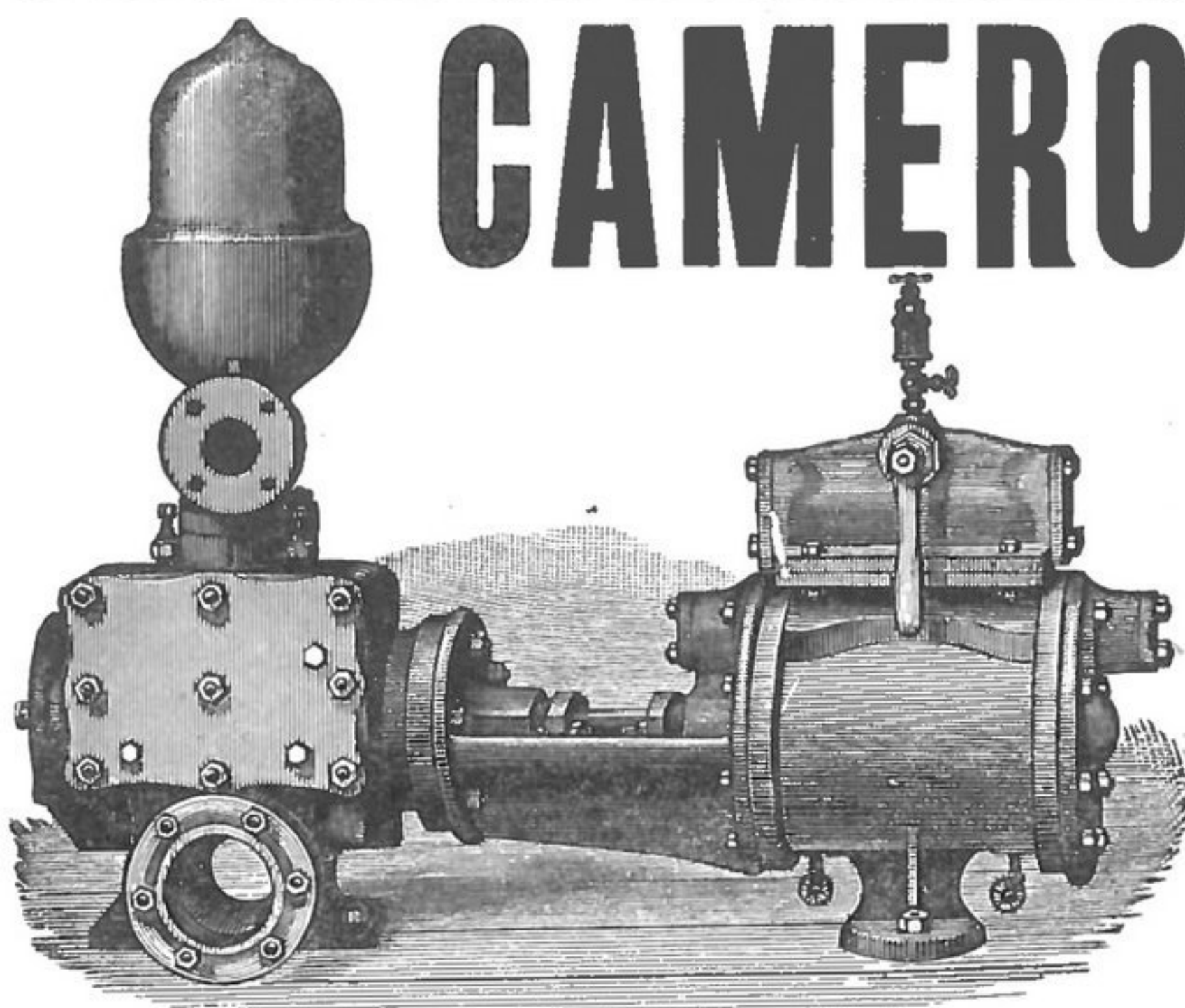
**JUNIOR** 6 Sizes in Stock,  
5 to 50 H. P.  
An Automatic Engine cheaper than a Slide Valve.  
WELL BUILT. ECONOMICAL. RELIABLE.  
**Over 300 Sold the First Year.**

All the above built strictly to Gauge with  
INTERCHANGEABLE PARTS.  
REPAIRS CARRIED IN STOCK.  
SEND FOR ILLUSTRATED CATALOGUES.

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ENGINES**  
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UNITED STATES.**

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| New York,           | 17 Cortlandt St.                          | Westinghouse,<br>Church, Kerr<br>& Co. |
| Boston,             | Hathaway Building,                        |  |
| Pittsburgh,         | Westinghouse Build'g,                     |  |
| Chicago,            | 156, 158 Lake St.                         |  |
| Philadelphia,       | 608 Chestnut St. M. R. Muckle, Jr. & Co.  |  |
| St. Louis,          | 302, 304 Washington Av.                   | Fairbanks<br>& Co.                     |
| Kansas City,        | 312 Union Avenue,                         |  |
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| Salt Lake City,     | 259 S. Main St.                           | Utah & Montana<br>Machinery Co.        |
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| Portland, Or.       | 33, 35 N. Front St. Parke & Lacy Mch. Co. |  |
| Charlotte, N. C.    | 36 College St.                            | The D. A. Tompkins Co.                 |
| Atlanta, Ga.        | 45 S. Prior St.                           |  |
| Dallas, Tex.        | Keating Imp. & Machine Co.                |  |
| Chattanooga, Tenn., | C. E. James & Co.                         |  |



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**SIMPLE! COMPACT! DURABLE!**  
**"NO OUTSIDE VALVE GEAR."**

**Steam, Air & Vacuum Pumps in Every Variety**

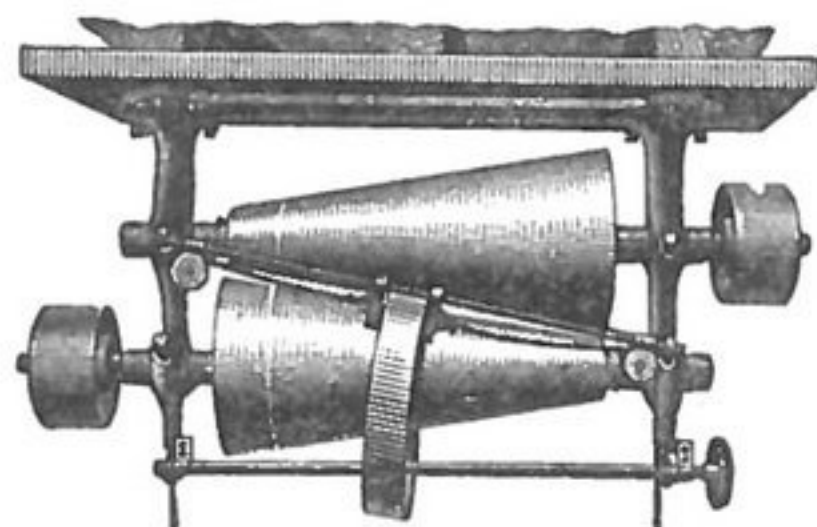
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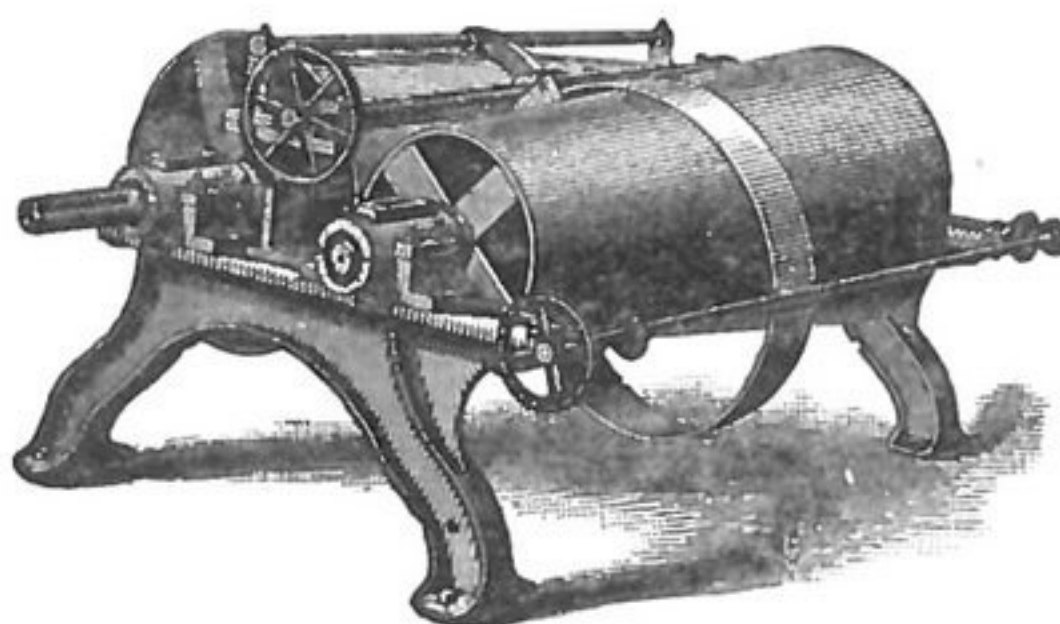
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## THE EVANS FRICTION CONE & FRICTIONAL GEARING

"PATENTED."



This cut represents a set of hanging cone pulleys. This pattern is intended for that class of machinery that stops and starts at the same speed, and at the same time be able to change the speed more or less while running. These cones are also fitted with a governor where a steady motion is required and the initial power is



fuctuating. All sizes made from  $\frac{1}{2}$  Horse Power to 50 Horse Power. SEND FOR ILLUSTRATED CATALOGUE.

**EVANS FRICTION CONE CO., 85 Water St., BOSTON.**

**SHIPPERS  
CAN SAVE TIME  
AND TROUBLE  
AND CASH**

BY USING  
**BARLOW'S**  
PATENT  
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**SHIPPING  
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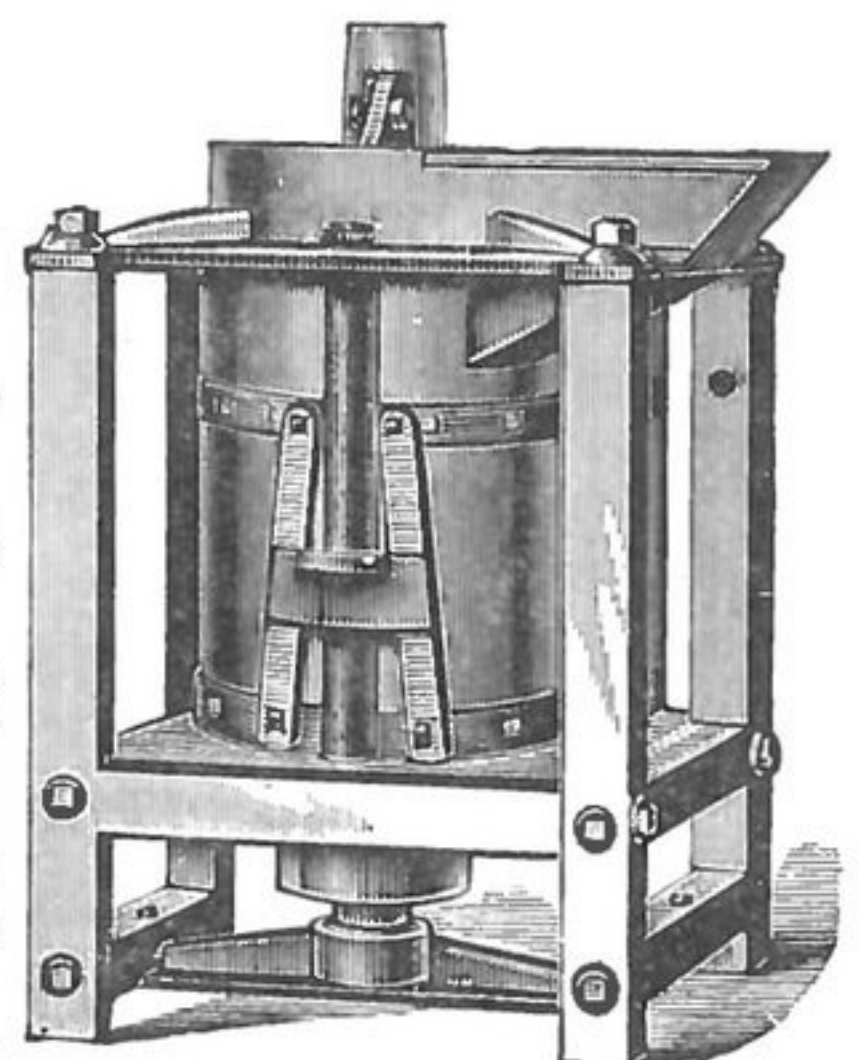
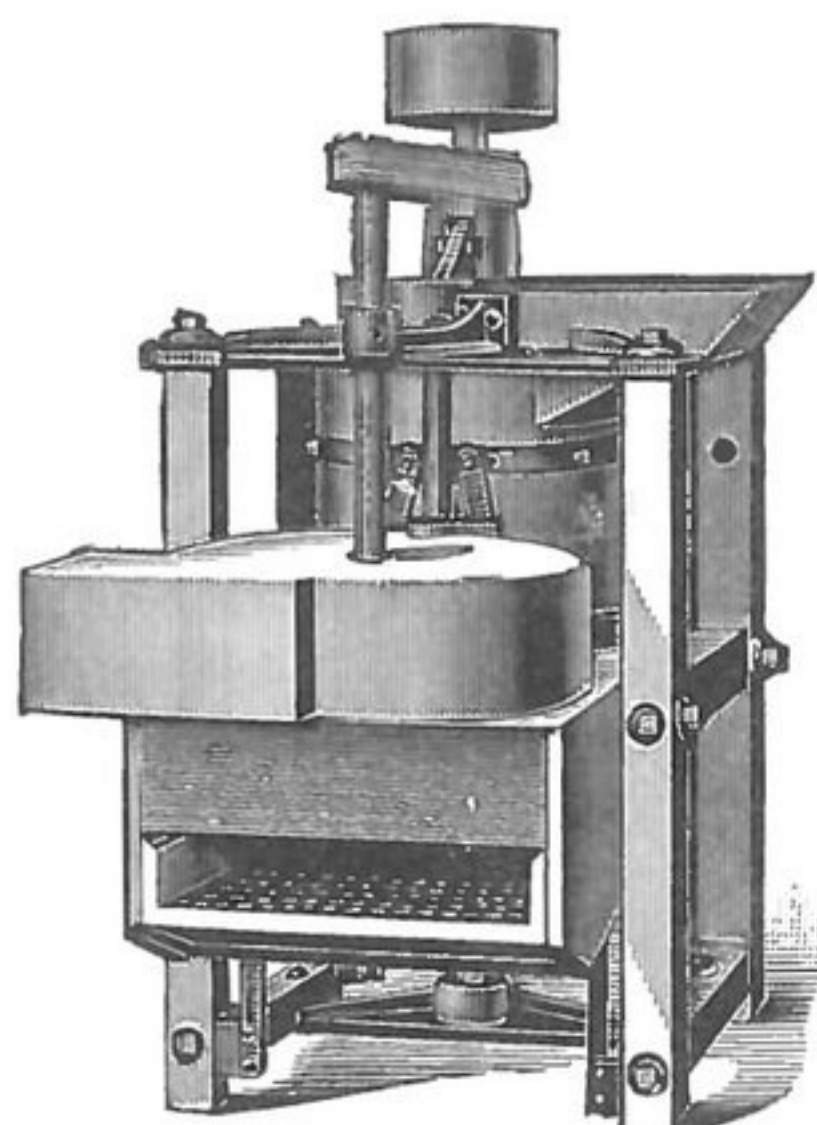
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OFFICE OF THE MILLING WORLD,  
BUFFALO, N. Y., Feb. 8, 1890.

Friday of last week was a day of active and irregular markets, generally closing firmer. February wheat closed in New York at 84½¢, with Atlantic port receipts 23,225, exports 35,537, and options 7,000,000 bushels. February corn closed at 36¾¢, with receipts 571,652, exports 158,790, and options 1,112,000 bushels. February oats closed at 28½¢, with receipts 155,410, and exports 14,601 bushels. Wheat flour ruled dull, weak and unsettled, with sellers trying to force sales on large concessions. Receipts included 3,041 sacks and 33,588 barrels, and exports 10,020 sacks and 10,619 barrels. The minor lines were unchanged.

Saturday brought better cables, reports of lighter deliveries and stocks and coverings by shorts, resulting in stronger markets. February wheat closed at 84½¢, with receipts 59,126, exports 176,904, and options 2,216,000 bushels. Interior receipts for the week were only 1,079,000 bushels. The Liverpool stocks were reported at 250,000 quarters of all kinds of wheat, the smallest for many years. February corn closed at 36¾¢, with receipts 484,058, exports 650,019, and options 880,000 bushels. The Liverpool stocks were reported to be only 600,000. February oats closed at 28½¢, with receipts 181,420, exports 38,144, and options 85,000 bushels. Wheat flour was unchanged, and buyers seemed inclined to hold off for still lower prices. All purchases were for current needs. Receipts were 10,671 sacks and 35,604 barrels, and exports 24,260 sacks and 10,140 barrels. Winter-wheat flour receivers report smaller stocks on hand than they had a year ago. Spring-wheat flour receivers have holdings as large as those of last year. The flour stocks in New York on February 1 included 168,950 barrels of winter and 145,725 of spring, a total of 314,675 barrels, against 353,195 barrels last year. None of the minor lines showed quotable changes.

Monday found the shorts covering wheat and longs selling corn, and the markets were more active. February wheat closed at 85¼¢, with receipts 36,062, exports 7,828, and options 2,000,000 bushels. February corn closed at 36¾¢, with receipts 629,273, exports 332,624, and options 1,864,000 bushels. February oats closed at 28½¢, with receipts 227,766, exports 18,799, and options 140,000 bushels. Wheat flour ruled extremely dull at irregular and unsettled prices. Reports of concessions on superior brands were circulated and denied. The receipts were 13,088 sacks and 38,335 barrels, and the exports 18,881 sacks and 1,523 barrels. All the minor lines were featureless. The visible supply in the United States and Canada was:

|             | 1890.      | 1889.      | 1888.      |
|-------------|------------|------------|------------|
|             | Feb. 1.    | Feb. 2.    | Feb. 4.    |
| Wheat.....  | 31,489,193 | 34,874,338 | 41,086,646 |
| Corn.....   | 11,918,447 | 13,323,294 | 7,817,070  |
| Oats.....   | 5,156,474  | 8,064,846  | 5,402,768  |
| Rye.....    | 1,513,403  | 1,698,091  | 363,468    |
| Barley..... | 1,895,211  | 2,384,180  | 2,929,159  |

Tuesday was a day of active and easier markets at opening, with better prices at closing, on shorts covering and lighter receipts in the West. February wheat closed at 85¼¢, with receipts 47,034, exports 121,788, and options 3,124,000 bushels. February corn closed at 36¾¢, with receipts 649,135, exports 251,853, and options 2,120,000 bushels. February oats closed at 28½¢, with receipts 145,162, exports 9,802, and options 150,000 bushels. Wheat flour was depressed, with large clearances from New York on old sales. Receipts were 12,441 sacks and 28,088 barrels, and exports 39,957 sacks and 9,749 barrels. The market was generally in buyers' favor. The other lines were unchanged and featureless.

The following shows the amount of wheat and flour, together with the amount of corn on passage to United Kingdom, for ports of call or direct ports for the weeks mentioned:

|                          | 1890.     | 1889.     |
|--------------------------|-----------|-----------|
|                          | Feb. 4.   | Feb. 5.   |
| Wheat and flour, qrs.... | 2,101,000 | 2,328,000 |
| Corn, qrs.....           | 400,000   | 328,000   |

The following shows the amount of wheat and corn on passage to the Continent for the past week and for the same week last year:

|                 | 1890.   | 1889.   |
|-----------------|---------|---------|
|                 | Feb. 4. | Feb. 5. |
| Wheat, qrs..... | 439,000 | 373,000 |
| Corn, qrs.....  | 337,000 | 176,000 |

|                                    | Qrs.   |
|------------------------------------|--------|
| Shipments India wheat to U. K..... | 10,000 |
| do do Continent..                  | 37,500 |

The imports into the United Kingdom for the past week and for the same weeks in previous years were as follows:

|                  | 1890.   | 1889.    | 1888.   |
|------------------|---------|----------|---------|
|                  | Feb. 4. | Jan. 28. | Feb. 5. |
| Wheat, qrs.....  | 194,000 | 238,000  | 330,000 |
| Corn, qrs.....   | 164,000 | 105,000  | 150,000 |
| Flour, bbls..... | 199,000 | 92,000   | 172,000 |

Wednesday was a day of irregularity and activity. February wheat closed at 85½¢, with receipts 46,112, exports 17,332, and options 2,664,000 bushels. February corn closed at 36¾¢, with receipts 528,762, exports 433,895, and options 1,160,000 bushels. February oats closed at 28½¢, with receipts 200,593, exports 10,136, and options 350,000 bushels. Buckwheat grain was nominally 40@42c. Rye grain was dull and steady at 54@55c. on track for ungraded, 58c. afloat for full loads do, 59@60c. for No. 1 State, 57@58c. for No. 2 Western, full loads, delivered. Barley was quiet and nominal. Quotations: Two-rowed State 50@51c. for prime; six-rowed do 54@57c.; extra No. 5 Canada 62@63c.; No. 2 do 59@60c.; ungraded do 59@69c.; Western 49@55c. Malt was nominally unchanged and unsalable. Quotations: Canada country-made 75@8½c.; city 80@90c.; six-rowed 75@80c.; two-rowed 65@70c.; Western 60@85c. Mill Feed was more active and steady as a rule at old prices, with trade taking hold more freely, of 40 and 60-lb. chiefly; 5,000 bags 40 and 60-lb. were sold by one mill at 60c. regular, and another 2,000 bags at 62½c. for 40 and 60-lb., and 75c. for 100-lb.

Wheat flour was generally unchanged. Receipts included 10,554 sacks and 26,396 barrels, and exports 21,180 sacks and 11,541 barrels. Western mills refused to make further concessions, as good milling wheat is advancing in price perceptibly. The quotations were as follows:

| SPRING FLOUR.    |             |             |
|------------------|-------------|-------------|
|                  | Sacks.      | Barrels.    |
| No grade.....    | \$1.25@1.40 | \$....@.... |
| Fine.....        | 1.40@1.70   | 1.60@2.00   |
| Superfine.....   | 1.75@2.10   | 2.05@2.30   |
| Extra No. 2..... | 2.15@2.50   | 2.40@2.85   |
| Extra No. 1..... | 2.85@3.10   | 3.10@3.65   |
| Clear.....       | 3.00@3.25   | 3.25@3.55   |
| Straight.....    | 3.75@4.15   | 4.00@4.60   |
| Patent.....      | 4.35@4.65   | 4.60@5.05   |

| WINTER FLOUR.    |             |             |
|------------------|-------------|-------------|
|                  | Sacks.      | Barrels.    |
| No grade.....    | \$1.35@1.70 | \$....@.... |
| Fine.....        | 1.85@2.00   | 1.85@2.15   |
| Superfine.....   | 1.85@2.15   | 2.00@2.40   |
| Extra No. 2..... | 2.25@2.70   | 2.55@2.90   |
| Extra No. 1..... | 2.75@3.40   | 2.85@3.65   |
| Clear.....       | 3.10@3.50   | 3.40@3.90   |
| Straight.....    | 3.65@3.90   | 4.05@4.75   |
| Patent.....      | 3.95@4.20   | 4.35@4.80   |

| CITY MILLS.       |  |           |
|-------------------|--|-----------|
|                   |  |           |
| W. I. grades..... |  | 4.20@4.35 |
| Low grades.....   |  | 2.30@2.40 |
| Patents.....      |  | 4.65@5.20 |

Buckwheat flour was dull at \$1.25@1.40. Rye flour was quiet at \$2.85@3.00. Corn products were flat at the following quotations: Coarse meal 74@77c.; fine yellow 90@93c.; fine white 90@95c. for old stock new 5c. less; Brandywine \$2.65; Western and Southern \$2.60@2.50.

Thursday brought lower markets, on sales by longs and shippers and country dealers, and on lack of export demand. February wheat closed at 84½¢, with receipts 20,000, exports 25,743, and options 3,376,000 bushels. February corn closed at 36¾¢, with receipts 434,840, exports 320,403, and options 1,400,000 bushels. February oats closed at 28½¢, with receipts 190,184, exports 12,686, and options 200,000 bushels. Wheat flour was a little steadier, with some activity in winter flours from fancy patents down to superfine. Receipts were 10,793 sacks and 22,161 barrels, and exports 24,855 sacks and 22,956 barrels. The minor lines were unchanged and featureless.

#### BUFFALO MARKETS.

WHEAT—Very little was done in wheat to-day. No. 1 hard is nominally 91c., but some dealers say it can be bought for less. No. 1 Northern sold to-day at 88c. No. 2 red winter is held at 83½@84c. Some extra No. 3 red sold at 79½c. No. 2 white is held at 78½c. CORN—No. 3 Corn is quoted to-day at 32½@33c., and No. 2 yellow at 33½c. Only a few cars were sold and the market is firm at these figures. OATS—No. 2 white oats were held to-day at 27@27½c. Some were sold at 27½c. The tone of the market is easier. RYE—Quotations are nominal at 52@53c. on track, but there is no trading here. BARLEY—There is no change to report. No. 1 Canada is quoted at 65c.; No. 2 do at 58@61c., and No. 3 at 52@56c., but no sales are reported. The chief inquiry is for Western barley at 50c. or below, and not much for that. OATMEAL—Akron, \$6.00; Western, \$5.75 per bbl.; rolled oats, in cases, 72 lbs., \$3.25. CORNMEAL—Coarse, 80@85c.; fine, 85@90c.; granulated, \$1.50 per cwt.

#### EFFECTS OF CULTURE.

Those peculiar individuals, who proclaim that the "official average" of wheat grown to the acre in the United States, 11 or 12 bushels to the acre, "measures accurately the capacity of American soil for the culture of wheat," will be interested in the following statement, which shows what careful culture will do for farmers who are willing to be careful. A wheat-growing contest in 1889 resulted in giving a \$500 gold prize to William Gibbey, of Salt Lake City, Utah, who grew 80 bushels and 6 pounds of cleaned wheat on one acre. The yield was reduced somewhat by the depredations of English sparrows, which took a share of the grain. The second prize went to Robert C. Nisbet, of Del Norte, Colorado, whose yield was 69 bushels and 24 pounds of cleaned wheat to the acre. The third prize was won by J. H. Lee, of Saluda, Indiana, on a yield of 48 bushels and 17 pounds of cleaned wheat to an acre, on land that in favorable seasons had yielded 53 bushels right along. The fourth prize went to Bartholomew Gedney, of White Plains, Westchester county, New York, who got 45 bushels and 50 pounds of cleaned wheat from an acre. Mrs. A. O. Woodford, of Trumbull county, Ohio, cut an average of 41 bushels from a common 5-acre tract. W. T. Greider, of Lancaster county Pa., cut a crop of 40 bushels to the acre. D. M. Cassleburg, Lower Providence, Pa., cut an average of 38 bushels and 14 pounds to the acre. F. J. Canfield, Yam Hill county, Oregon, cut 34 bushels and 10 pounds to the acre.

Under competition corn-growing showed equally gratifying results. Zachariah Jordan Drake, of Marlborough county, South Carolina, won \$1,000 in prizes for the greatest yield of corn on an acre of land. His crop yielded 17,407 pounds of ear corn, equal to 14,273¼ pounds, or 254 bushels and 48¾ pounds of shelled corn, green weight, to the acre. When dried, the crop was 239 bushels of shelled corn to the acre, and when kiln-dried it was reduced to 217 bushels. The second prize was won by Alfred Rose, in Yates county, New York, who produced 174 bushels of kiln-dried corn on an acre. The third prize went to George Gartner, of Pawnee county, Nebraska, whose yield was 137 bushels of absolutely dry corn on an acre. The largest yield ever recorded before was 200 bushels of dry shelled corn, which was claimed to have been made by Dr. J. W. Parker, on a farm near Columbia, South Carolina.





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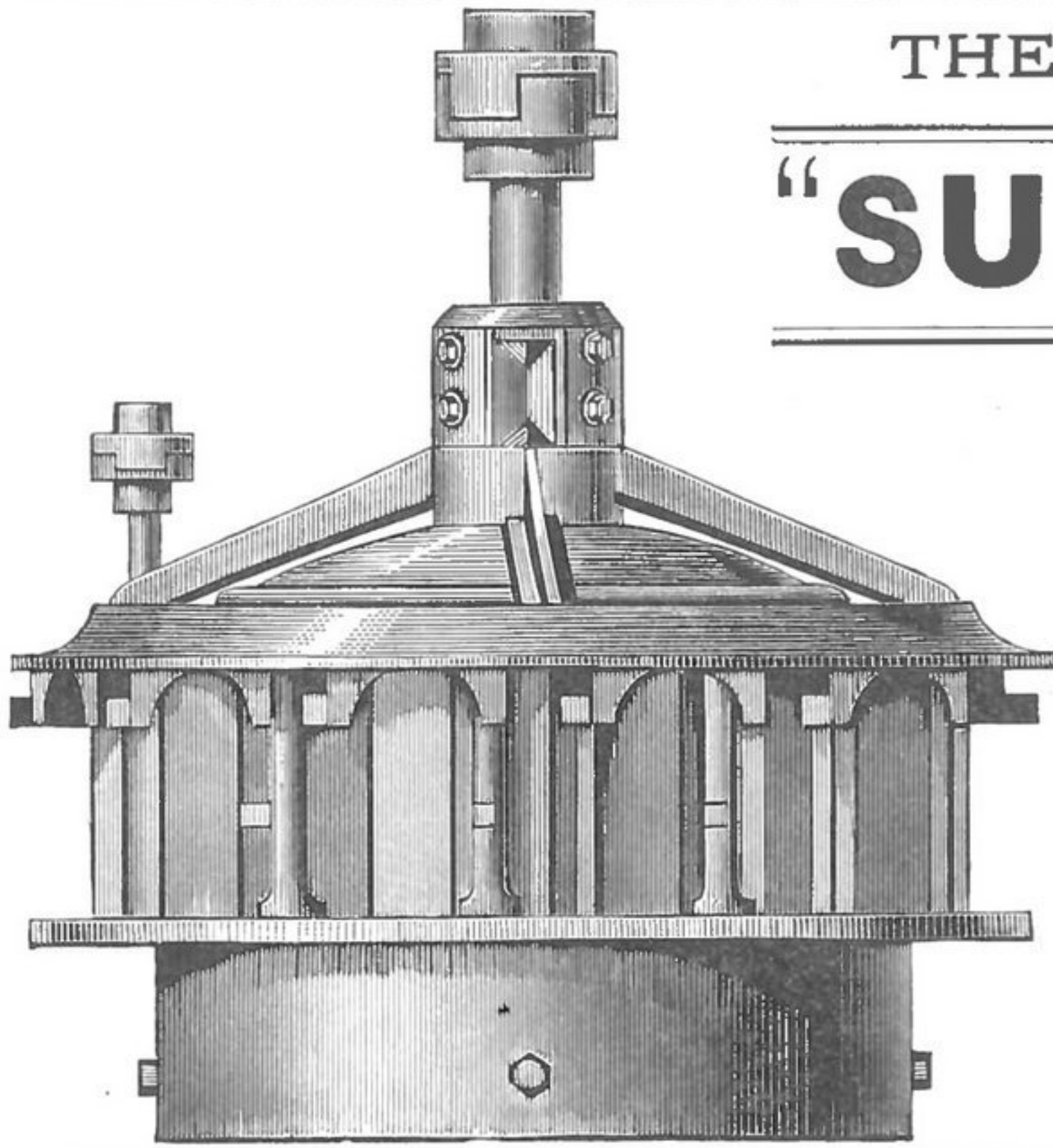
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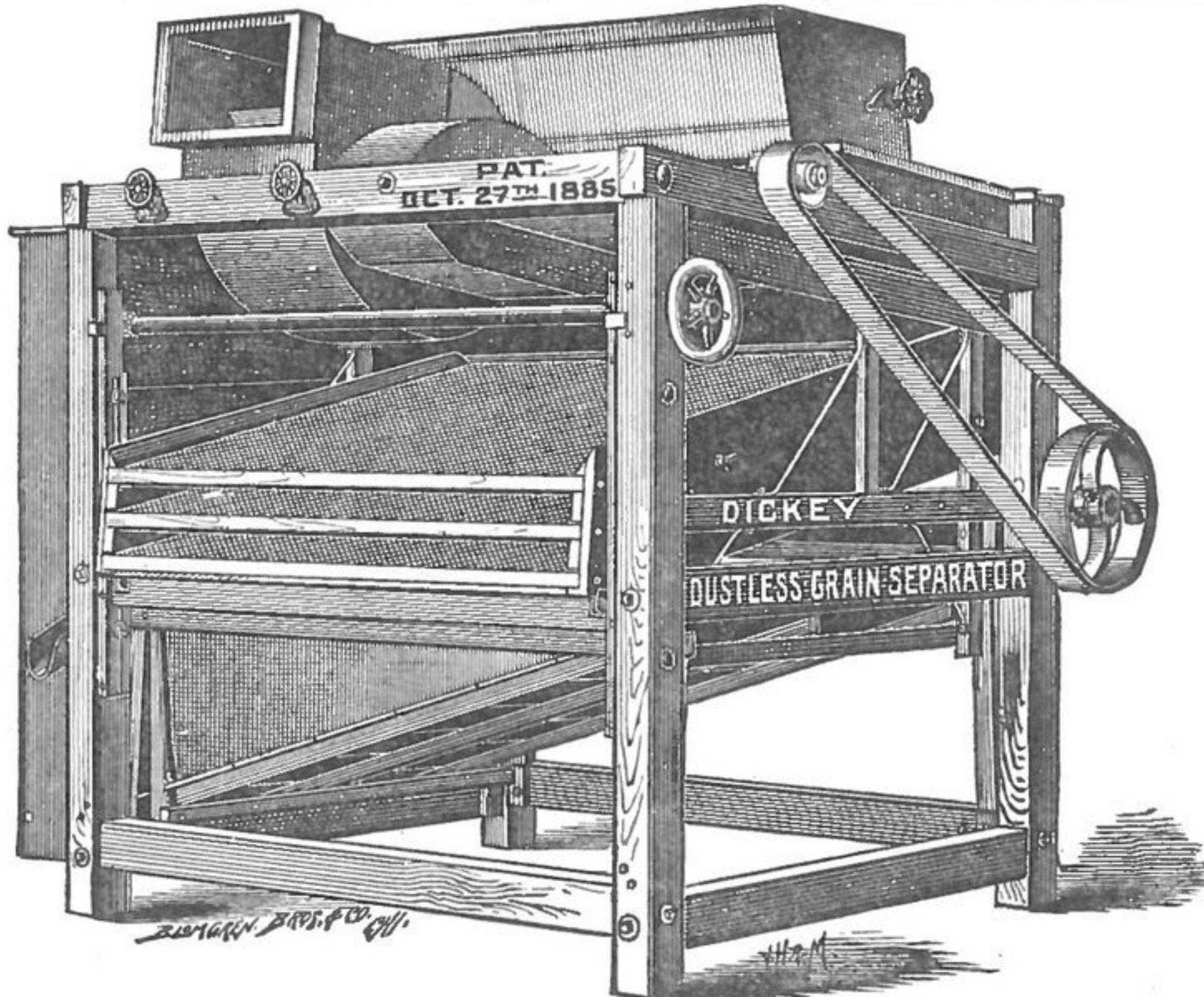
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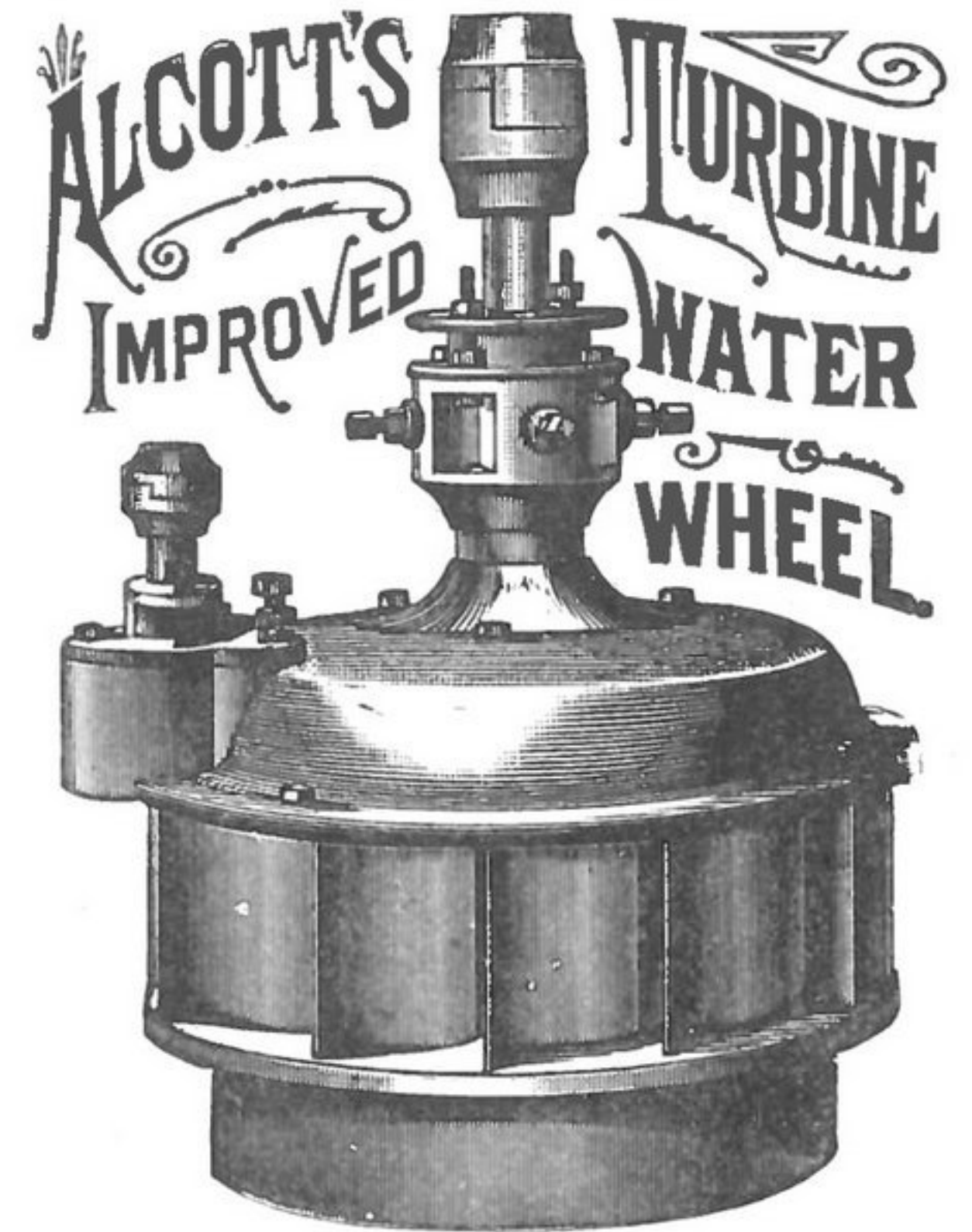
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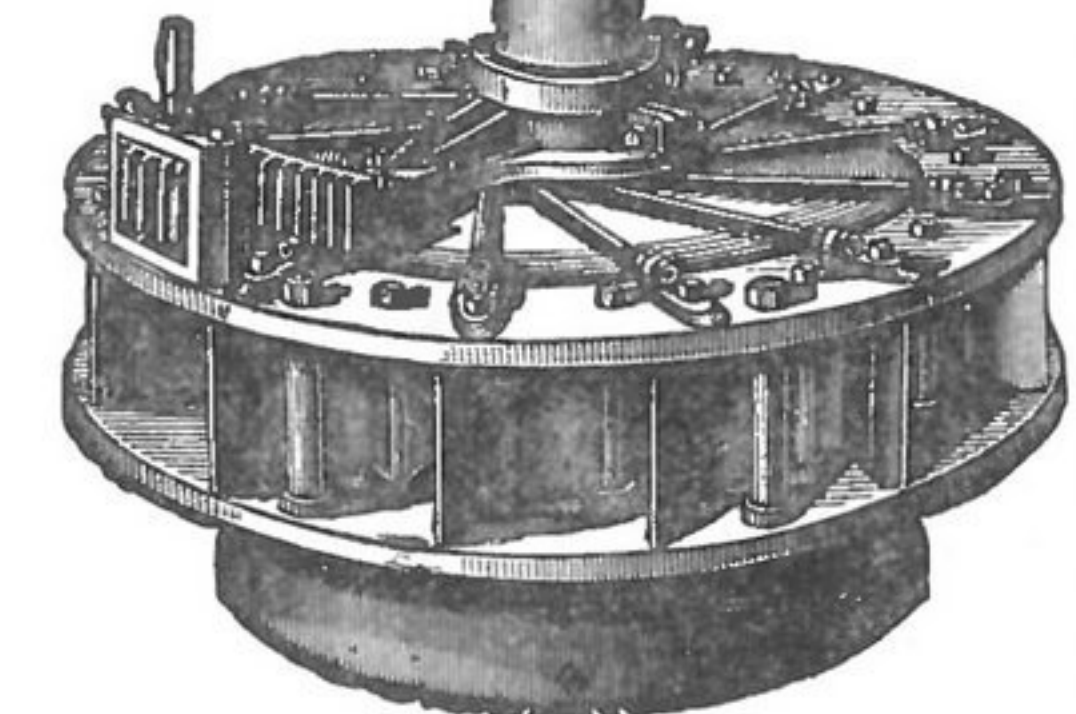
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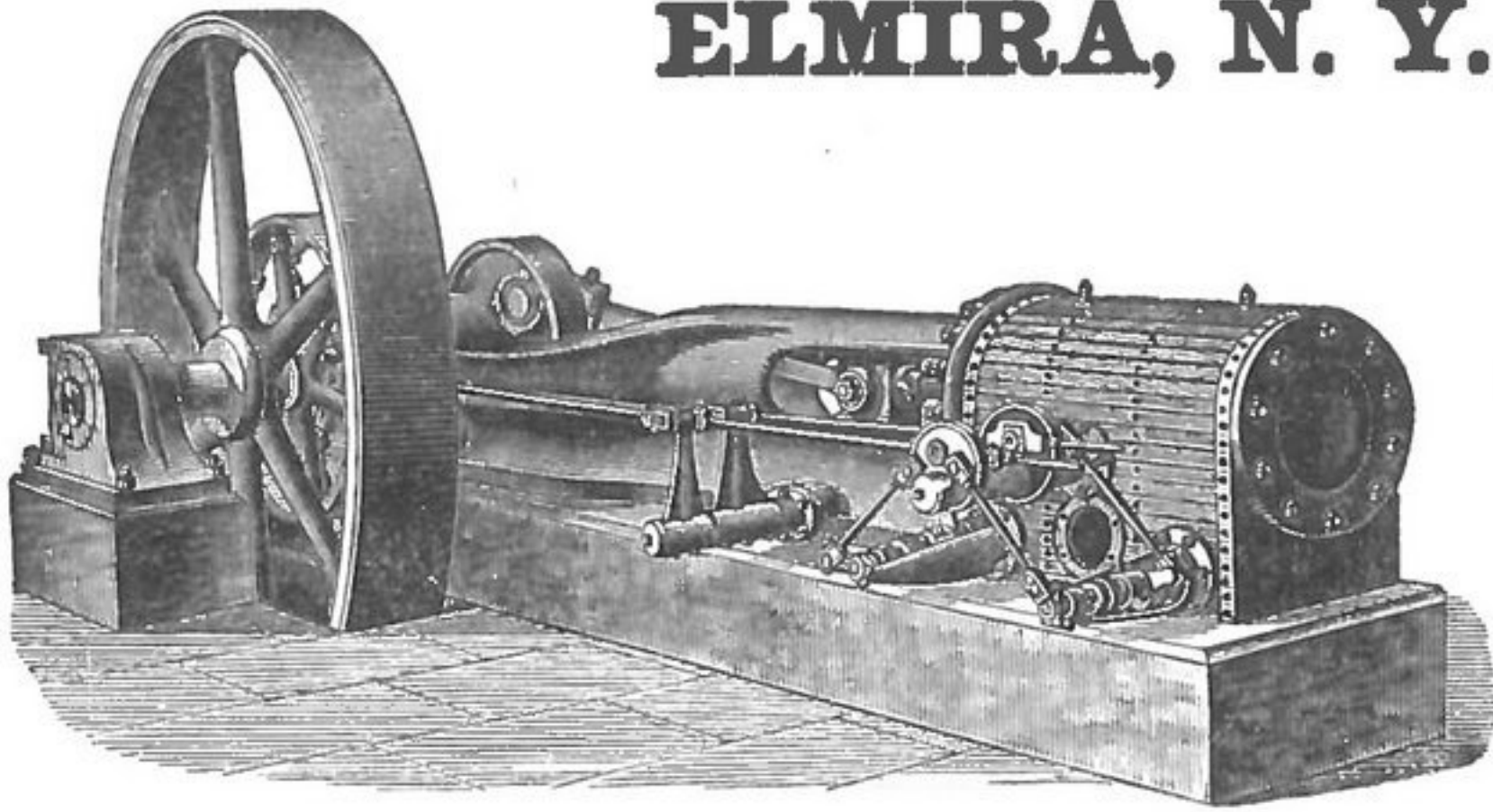


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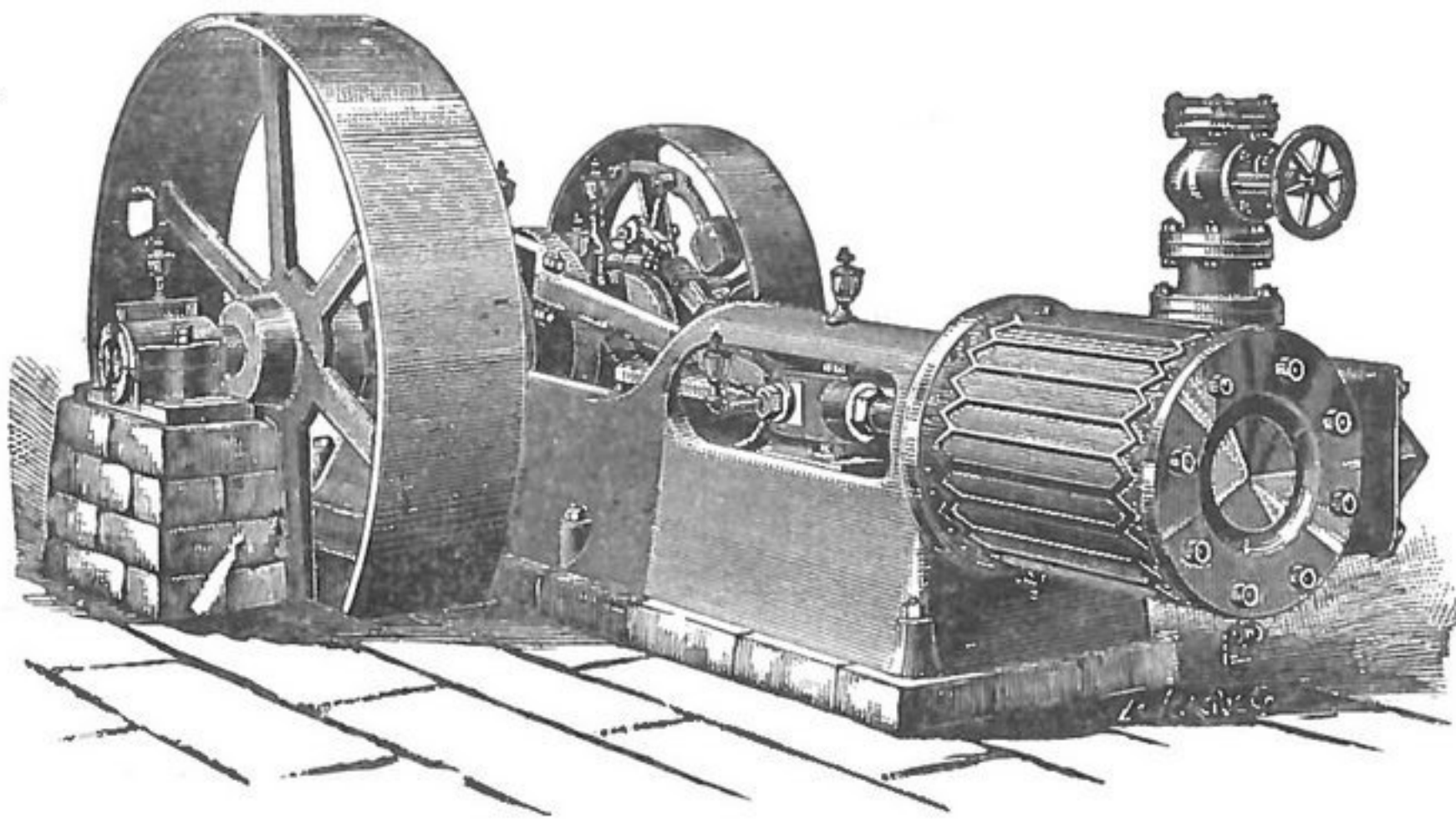
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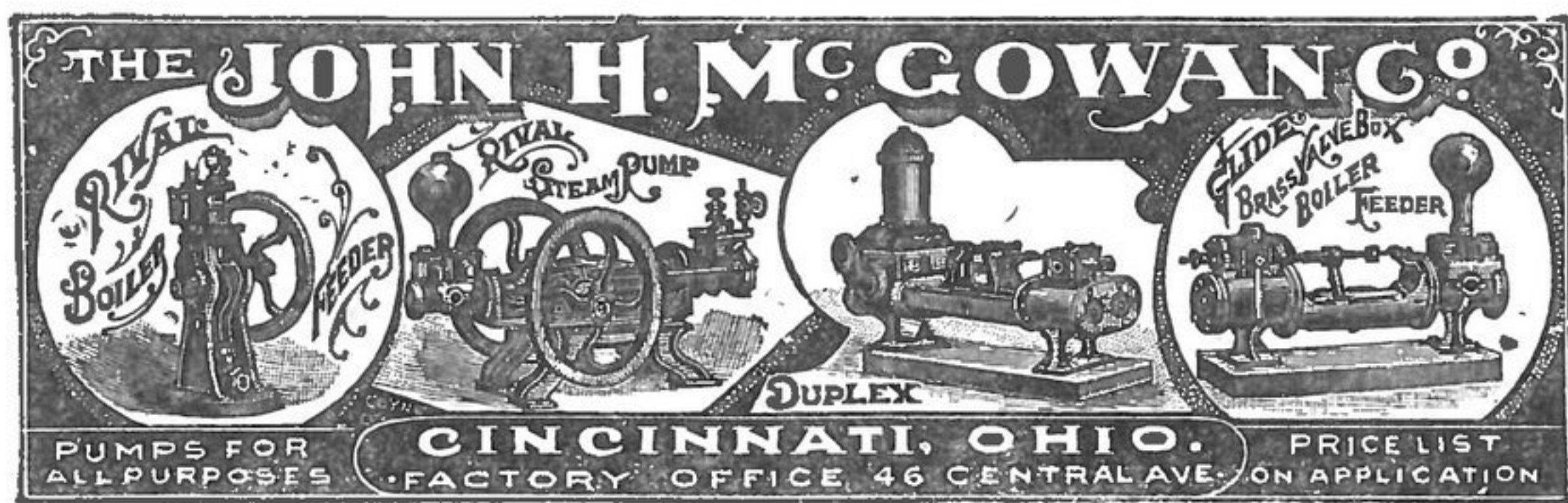
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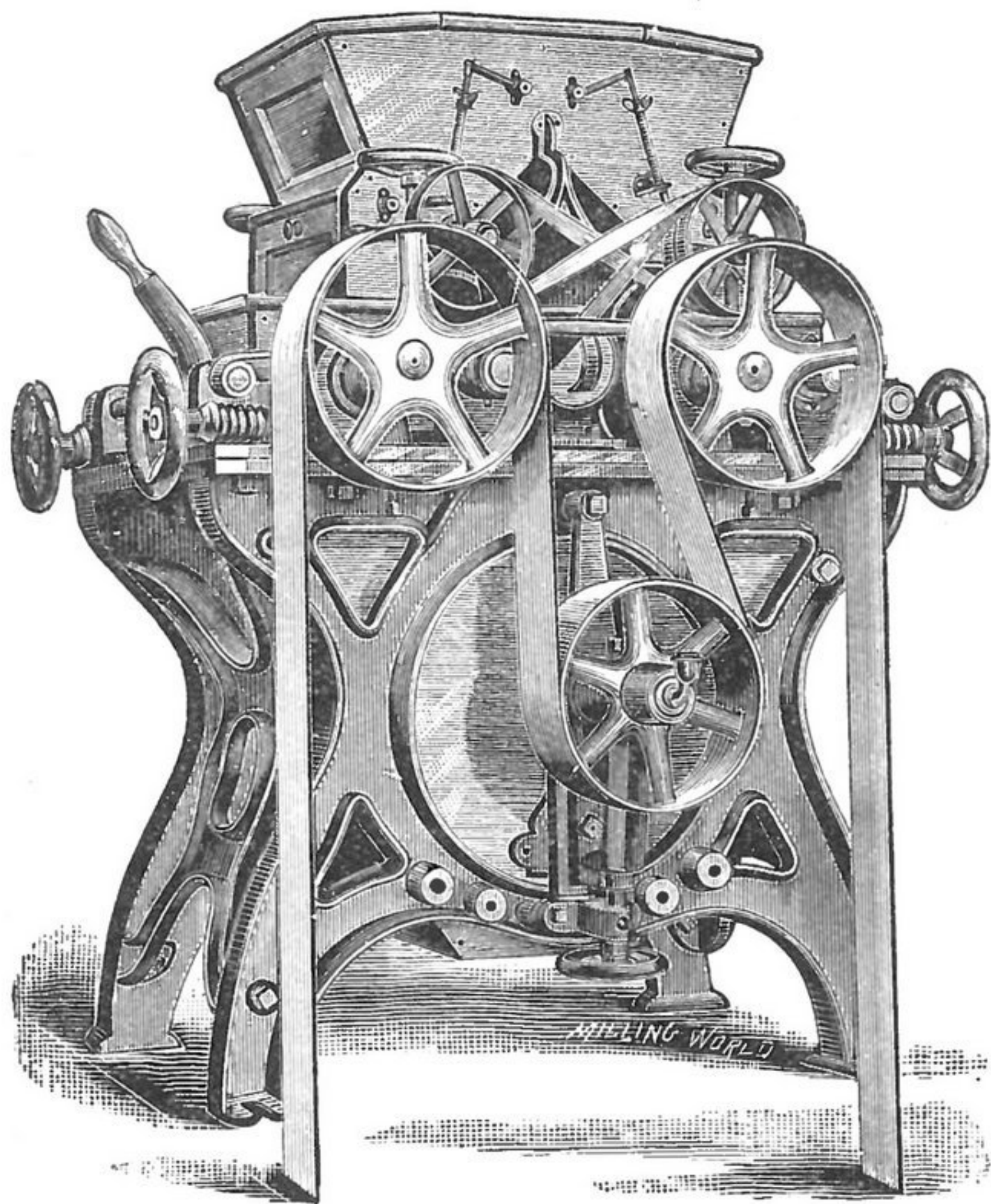
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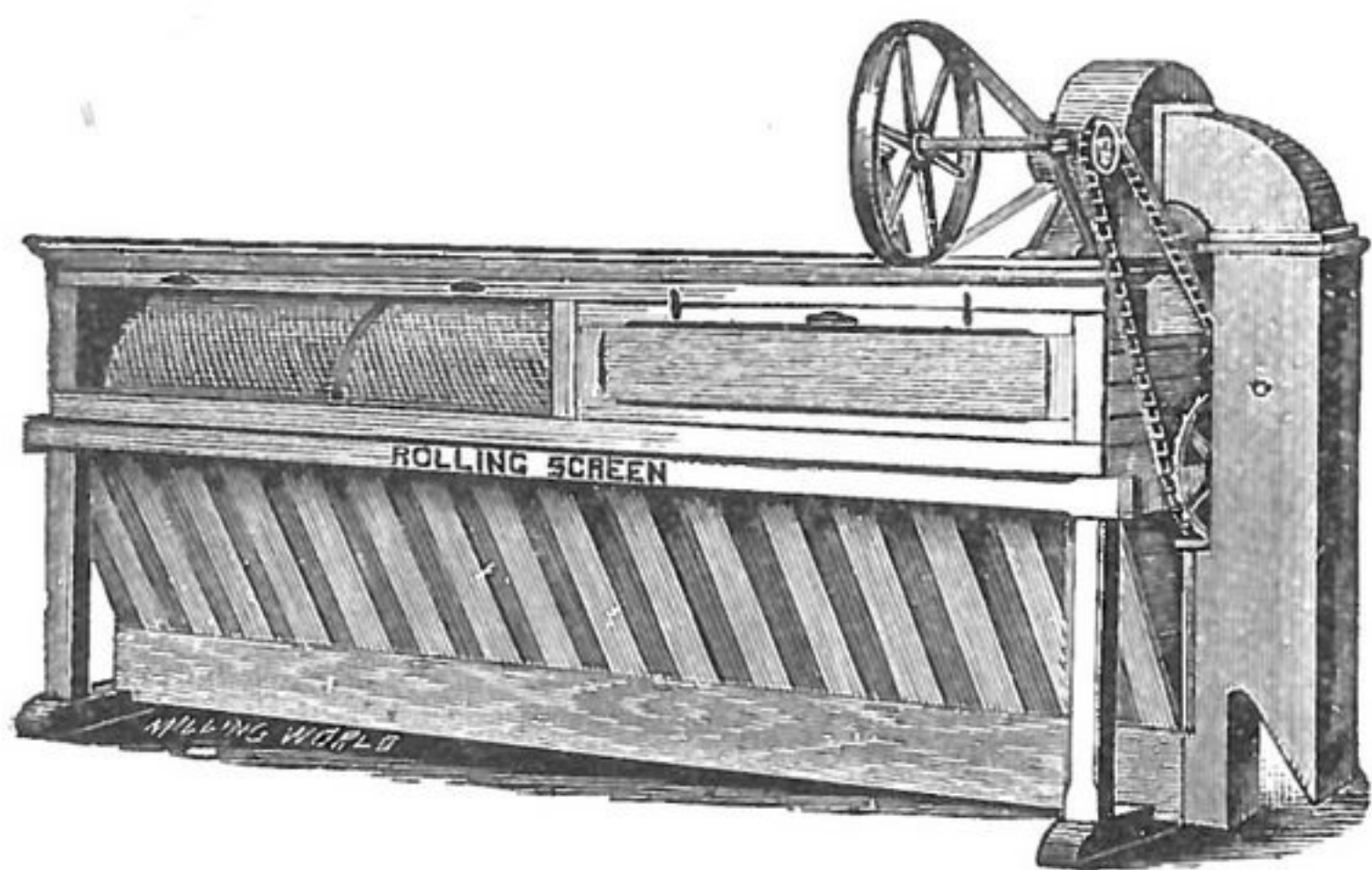
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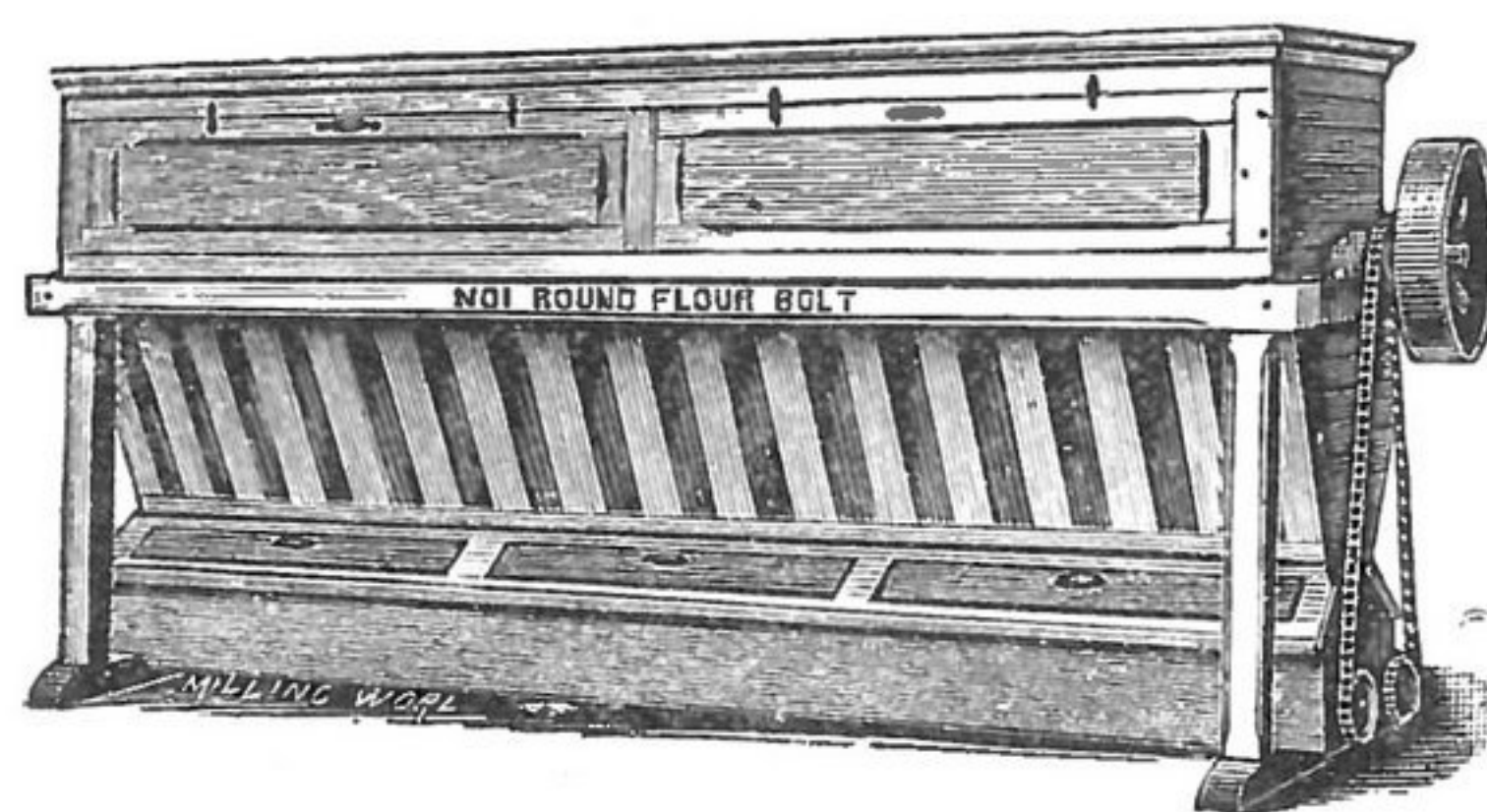
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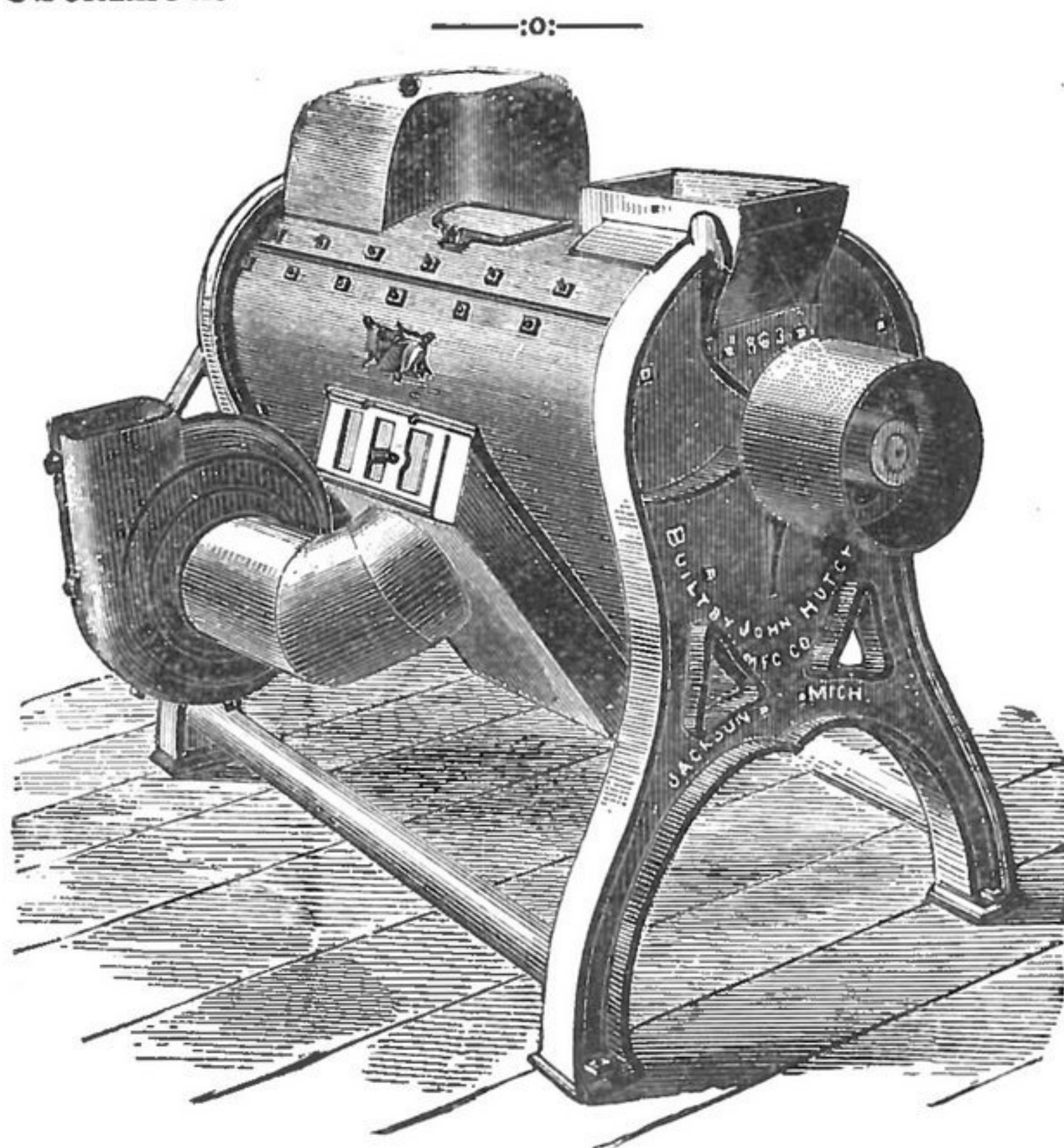


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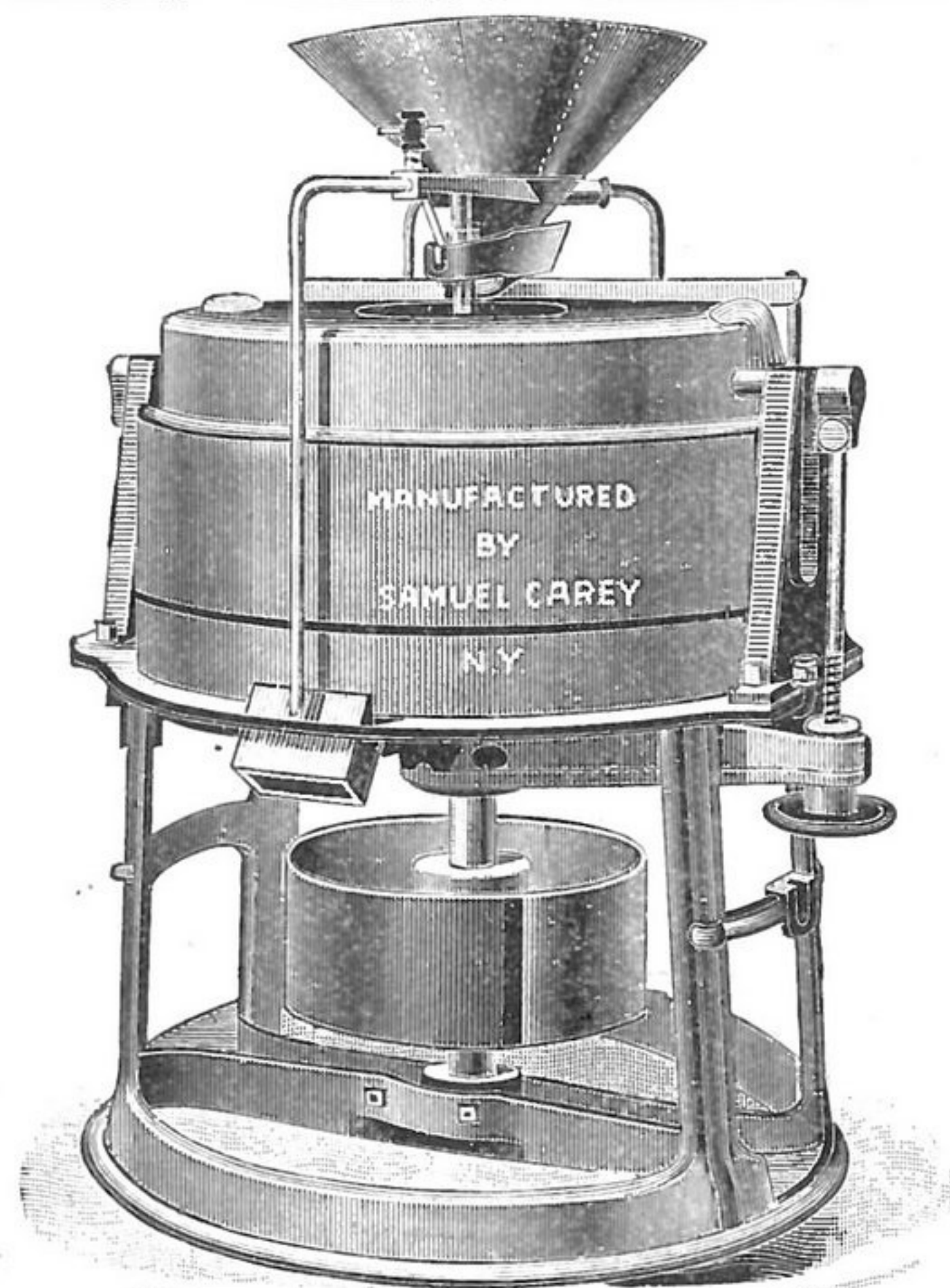
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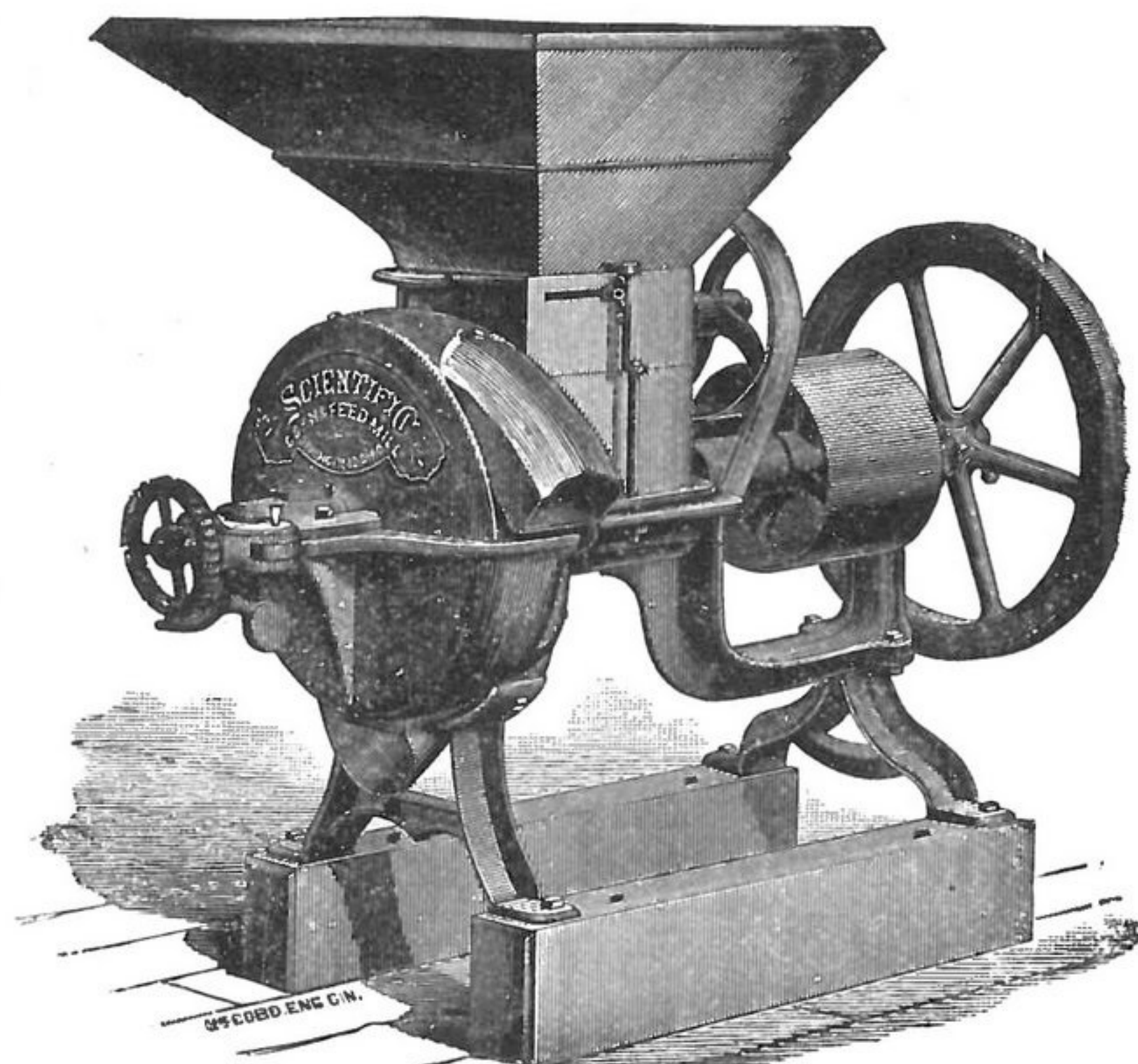
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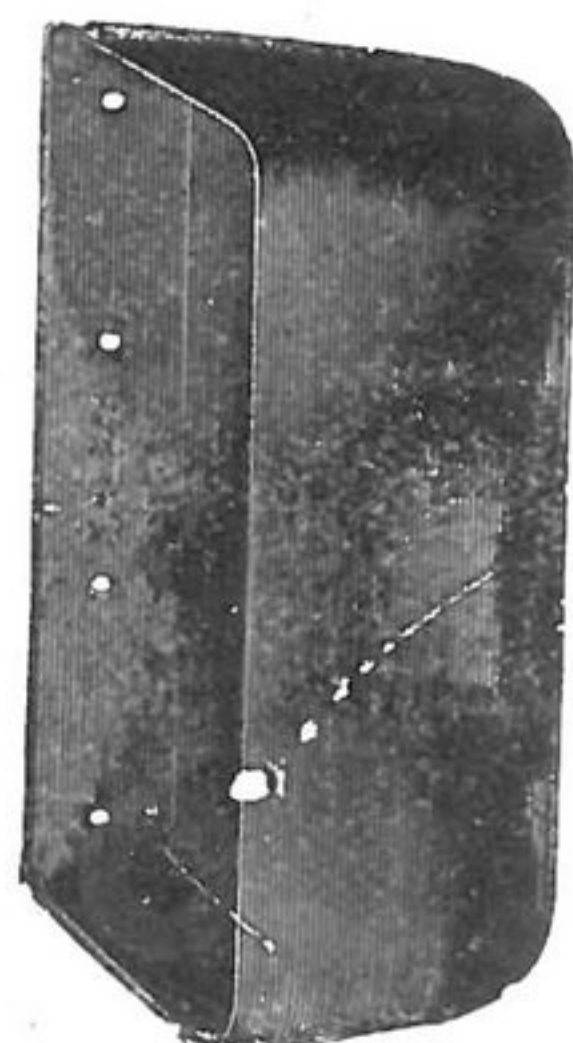
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